inside

Our **CLASS OF '83** are enjoying their first real break before next year's finals and the hunt for jobs. We interview the survivors as they draw breath for the last lap (pages 10 and 11)

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Where **IGNORANCE** is bliss . . . Tony Tanner reviews Andrew Martin's study of the relationship in culture between ignorance and knowledge, ranging from the biblical Eden to the science fiction of the 19th century (page 17)

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NEXT WEEK

The birth of the small family

The UGC and research

J. D. Y. Peel on anthropology and history

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TIMES PAST — THE TIMES

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An Essay on Education I

Youth is a foreign country

This four-part essay, which will fill this space during August, is about education – not universities and polytechnics but schools. Its territory will be the entire apparatus of government institutions, the diversity of values and practices, the accumulation of past traditions and the assembly of future hopes that make up British education a century or more after the 1870 Act, half a century or less after the postwar extension of compulsory education to secondary schools, and almost exactly a quarter of a century after the progressive school reforms of the 1960s and the great expansion of higher and further education that was their contemporary.

This essay is informed by two perspectives that may also help to explain its intentions. The first is that higher education sits on top of but at the same time apart from schools and colleges. In one sense higher education has an imperial relationship with the rest of education; it attracts the brightest pupils from schools and colleges and so deeply influences their structure and practice; and it both judges and articulates the values that are expressed through the wider education system.

But in another sense higher education is isolationist. Maybe its three-fold expansion since 1960 has increased this sense of apartness from the schools. Once university and school-teachers were quite close; now they inhabit more distant professional worlds. In the eyes of many higher education has become a different kind of enterprise from the education system in which it is rooted. Advancing the frontier of knowledge and servicing intellectual and industrial culture have tended to dominate and even overpower the simpler and older business of teaching.

The second perspective is that education, school education, is an absolutely fundamental process within British society which higher education for all the advances of recent years has not yet become (as it probably has in the United States). It is not simply that education is a mass political arena in which votes, maybe millions of them, are won and lost. It is that it holds up a mirror to our society and ourselves that offers an undistorted image of our beliefs and hopes, our ambitions and fears. The mirror that higher education holds up is different – more brilliant perhaps but more oblique and selective. Education addresses the whole nation; higher education only its most privileged and cerebral part.

So what is happening in schools, with their millions of pupils, shapes the possibilities in higher education, with its hundreds of thousands of students. This is true not only in an obvious and direct sense, such as the number of school leavers with good A levels or the pattern of subject specialization in schools. It is true also in a less direct but more penetrating sense because schools help to shape the political, social and cultural environment to which higher education is subject. However imperfect our democracy, numbers count and even the most influential élites must pay attention to this mass arithmetic. Universities are certainly the most powerful single institutions in British education, but they are overpowered by the cumulative influence of our 30,000 schools.

That at any rate is the justification for this essay. Its theme this week is those who are being educated, the young people of Britain, and their high-profile but private culture. Youth too can be a foreign country. Next week the subjects will be the institutions in which education is provided, those 30,000 schools, and those who do the educating, principally the teachers but also that long tail of ministers, civil servants, local authority officers, inspectors and the rest. On August 16 the focus will be on the process itself – what is taught, why and how. Finally, on August 23 an attempt will be made to explore the values and traditions embodied in our modern system of

* * *

Young people live in an all-consuming present. Unlike the old and the middle-aged they have no lengthy personal memories on which to draw; their integrity has to be constructed out of contemporary sensation. In a society already oppressed by the instant and the immediate, their oppression is particularly intense.

Nor is this inevitable shortage of personal memories compensated for by shared family memories. The structure of family life, the pattern of work, the centrifugal quality of leisure and culture mean that in modern Britain different generations even within happy settled families live quite separate lives. Working parents, divorce, single-parent families, the exclusion of grandparents, the decline of authority and the rise of "parenting", the headlong turnover of teenage culture – all these diverse phenomena inhibit communication across generations.

Nor are the lack of deep personal memories among the young and the unreliable transmission of family memories across generations compensated for by a rich social memory. Britain may be dotted with beautiful cathedrals, quiet country houses, deserted castles, many of them crowded with summer visitors. But it has become an ahistorical society. The considerable weight of our traditions is unacknowledged except as leisure, as commerce and sometimes as politics (whether in the Falklands War or the miners' strike).

Of course there is a great difference here between consciousness and institutions. At the level of the former the power of the present is unchallenged; our history has been reduced to the slumbering giant of our national subconscious. But in our institutions there seems to be too much history. We are ruled by a Parliament that continues to be mesmerized by its Victorian heyday. We join trade unions that still live off the moral capital of working-class solidarity accumulated in the industrial revolution. We work for companies dominated by an old-fashioned mercantilist rather than modern productive ethos. And we are served by, or subject to, a public administration that is paternalist and amateur.

For the young this is confusing. They are thoroughly modern and live in a society obsessed by the instant and the immediate. Yet this society is dominated by institutions that seem to owe too much rather than too little to the past. Maybe this awkward tension between a one-dimensional present and an entrenched past helps to explain why so many of our institutions are under-performing. They find it difficult to engage the support of, or even by properly understood by, the new generations which they have to mould and serve. They cannot easily be adapted to the volatility of each new generation's particular culture.

Yet the increasingly incestuous quality of each generation's unique experience is a remarkable feature of 20th-century culture. Every decade since the Great War has carried its own distinguishing marks. The hedonism of the booming 1920s, that uneasy attempt to recall prewar solidity; the stoicism of the depression decade of the 1930s when the pride of Victorian industrialism came tumbling down; the high seriousness of the 1940s created by a just war against evil enemies and an equally just struggle for social justice; the *enrichez-vous* 1950s when affluence and cold war came to Britain; the "swinging" 1960s of high hopes and high rise; the pendulum years of the 1970s when the postwar social democratic consensus first began to falter; now the troubled 1980s and in only five years the 1990s.

It has become a commonplace to argue that young people are influenced more by their peers than their parents, by present opportunity more than past tradition. Probably the dynamism of late too much continuity or allow too many backward regrets. Maybe these succeeding generations have acted as peer groups on the large scale. Certainly the dominant culture of each has been more powerful and exclusive than of the one before. What in the early part of the century could be characterized only tentatively as "the spirit of the age", from which there were many exceptions and exclusions, has become in our late 20th-century age of instant taste and mass communication something more oppressive, a set of attitudes and view of the world that are difficult to escape.

So young people in Britain in the 1980s live in a sometimes suffocating present. Their elders too often live in one-dimensional "presents", only different ones; their parents probably have been formed by the "present" of the 1960s, while the people who run Britain look back to an even more distant "present", probably that of the high-minded 1940s and now perhaps the brittly materialistic 1950s. Yet the difficulties that young people face go beyond this confusion of "presents" and the problems of translation it creates; theirs is a more intense "present", because it is the real one and because the pressures of peer-group orthodoxy are stronger and the countervailing pressure of non-peer authority weaker than ever before.

What is their present? What is the generational peer-group pressure of the 1980s, the persuasive culture of this decade? Two dominant characteristics need to be emphasized. First, the young are growing up in an ageing society, something which no generation has experienced in Britain for at least 50 years. Second, the threat of nuclear war, the prospect of mass unemployment and other omens of late 20th-century Britain mean that young people cannot find in hope for the future a compensation for their dissatisfaction with the present and ignorance of the past.

The first will have an incalculable influence over the way young people regard their world. Theirs is an almost unique experience; in pre-industrial society high mortality ensured the youth of the population while in industrial society high fertility more than made up for longer life spans. But in recent years that centuries-old pattern has been broken. The future will no longer belong so triumphantly to the young. Their relegation will have mixed results; easier to find a university place in the 1990s perhaps but maybe at the cost of a disrupted secondary education in the 1980s as schools are merged and closed to cope with falling rolls, a reduced social security burden now that SERPS is to be abolished but a less generous pension in mid-21st-century retirement.

Young people are likely to be affected by two great changes in the shape of society that will flow from this population shift. First, a far-reaching shift of resources within the welfare state has already begun, in a largely unplanned and involuntary way. Its most significant component, a redistribution from education and housing and to health and social security (despite the fate of SERPS), offers a concrete symbol of what is happening: the welfare state is now less concerned with building the infrastructure of the future than maintaining the fabric of the present. That may have profound political consequences. A welfare state that maintains the present rather than builds the future is a much less exciting prospect; it may be a less radical enterprise in the eyes of reformers and a less deserving cause in the eyes of a mass electorate.

This leads to the second change that will flow from an ageing society. The modern state has been developed over the past two centuries when society was young. Its growth has depended on the need to satisfy the demand of this youthful population for a better future. Its forward horizon has extended as it accumulated – in industrial development, improved public administration, the growth of a welfare state.

But what will happen when society is as much retrospective as prospective in its orientation, when its forward horizon shrinks to not much more than a decade, when stability and even contraction take over from growth? What will happen to the institutions designed to satisfy the old imperatives? What will it be like to be young in such a society? The practical difficulties of adjustment will be great but the psychological ones greater. It is difficult to believe that there will not be a rise in the level of public pessimism, linked maybe to a private quietism among adults. But among the young?

The second dominant characteristic of the 1980s – the threat of unemployment, the spectre of the bomb, and so on – will surely feed that pessimism. It is sometimes argued that young people in the 1980s are more pragmatic than those who were young in the 1960s or 1970s, that they are more realistic about jobs in particular. But that may be a shallow interpretation of what is in fact happened.

Once the best and the brightest among the young dreamed their dreams (for an essential while) the middling sort was able to pursue connected careers on which they built worthwhile lives; and even the less fortunate mostly found decent jobs. Today the best and the brightest cannot risk those dreams out of whole creativity and hope arise; the whole mass of young people has been forced to think in terms of jobs rather than careers; and the less fortunate are being formed into a frightening new class, their narrow world bracketed by youth training at the best and at the worst hooliganism and heroin. Is there a change for the better.

Young people today live in a world in which there are many more sticks than carrots, more penalties than opportunities. How will they adapt to this harsher environment? One strategy is a psychological retreat from the public world of jobs and politics to invest their most powerful energies in the private world of peers and pop. This would intensify the generational split in itself. It might also lead to a radical disengagement of work from moral value. For although in the 1980s jobs may have become more essential in a utilitarian sense they have also become less important in a more subtle cultural sense.

A second strategy is for the young to refuse to accept that the hopeful future which previous generations had confidently expected has been foreclosed; however utopian such a refusal may appear to a more cynical adult world. A paradoxical result may be to make the young appear old-fashioned, even reactionary and romantic. They may refuse to accept that "the party's over" in the welfare state; that a nuclear balance of terror has become inevitable; that uneconomic factories must be closed and redundant communities dispersed. Maybe CND (not all of it under the bed!) and the pop world's reaction to famine in Africa (and a "Saint" Bob Geldof!) demonstrate this simple but stubborn response by the young to the *realpolitik* cynicism of the old.

Either, or both, are possible, the implosion of ambition or the radical rejection of the diminished world accepted by their elders. It is also possible that a third strategy will prevail, that the young will embrace critically espouse the brave new world of IT, not simply as an instrument of work and play but in the sincere belief that new technology can produce a new technocratic morality. But that seems unlikely. As Dr Johnson reminds us, "Young men have more virtue than old men; they have more generous sentiments in every respect." Young women too of course.

Peter Scott

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Purge of bogus degrees

by Adriana Caudrey

The Government may legislate to stamp out the trade in bogus degrees and diplomas. Senior civil servants at the Department of Education and Science with special responsibility for monitoring academic fraud have been instructed to examine the feasibility of detailed proposals for legislation recently submitted to Mr Peter Brooke, under secretary for higher education.

It is felt both inside and outside the DES that the time has come to crack down on confidence tricksters who can currently trade unchecked. Mr David Stafford, an assistant secretary at the DES, said there was now a good case for a law to combat fraud specifically in the educational context.

The Fraud Squad has added weight to this argument and has become actively involved in the campaign for legislation. Officers have become increasingly frustrated because of their inability to prosecute degree salesmen under existing laws. As a result many recent investigations have had to be dropped.

Inspector Bob Moffat of the Fraud Squad assisted Mr Reg Prentice, Conservative MP for Daventry, a former education secretary and Mr Lyndon Jones, principal of South West London College, chairman of the Association of Business Executives, in drafting the proposals for legislation.

They want any individual or organization which offers qualifications which are not recognized by Government or education authorities to have to make this clear on their literature and certificates. Failure to comply with this might result in fine of £1000. In Inspector Moffat's words: "We want to price them out of the market."

The DES recently estimated there were at least 70 "degree mills" operating in Britain. These are individuals or organizations which sell paper qualifications which are not officially recognized, in return for little or no work. Other watchdogs say there are no more than 50 such "factories" run by as few as a dozen individuals.

Some degree merchants can make as much as £20,000 within a few weeks. Inquiries by *The THES* have shown it is possible to buy an "off-the-peg" degree for £300.

Mr Stafford said: "There was a purge three or four years ago, and the problem lay dormant. Now it seems to have surfaced again." Any new legislation should cover the whole spectrum of unrecognized institutions, from those which sell paper qualifications for no work, to those which offer qualifications of some value, "but not as great a value as they pretend", he said.

He warned that it might be foolish to legislate only against those selling bogus degrees, because of the risk that they would then trade in diplomas instead. However, it would be easier to outlaw the trade in degrees, because these may only be issued by an institution which has a Royal Charter. Universities are granted these by the Privy Council and polytechnics receive theirs through the Council for National Academic Awards.

Mr Stafford said that although there was a need to create an all-encompassing legislation, there was a risk that this would stifle reputable innovations in the private sector. And sanctions introduced in this country would not bite overseas where many of the degree mills advertise and draw customers.

The DES did not want to take on extra work. "We would like to introduce legislation which would be effective without involving us in a huge monitoring exercise."

University pay talks break down

by David Jobbins

University teachers' pay talks collapsed this week when hard-pressed vice chancellors rejected a union plan for a phased deal and stuck firmly to their initial offer of 4 per cent.

The Association of University Teachers, which has already rejected 4 per cent, had hoped that both the provisional agreement for polytechnic and college lecturers, and the top salaries review body report would create a climate conducive to a settlement. It suggested phasing as one way in which pay levels could be increased without overtaxing what it concedes are tightly stretched resources.

But while expressing sympathy with their case on erosion the vice-chancellors refused. A senior official of the Committee of Vice Chancellors and Principals said: "This would have committed us to agreeing to money next year which we do not have and when we do not know what the future holds. We are in a unique position in the public service so far as funding is concerned and cannot switch resources."

AUT general secretary Ms Diana Warwick said: "There may be no lack of integrity on the other side, but there is an appalling shortage of collective memory. Angry AUT members will recall 1974/75 and 1979/80 when university teachers unjustly lost out on their pay."

The deadlock means that there can be no agreement in time to beat an autumn deadline after which the employers will have to pay higher national insurance contributions for most university teachers.

The significance of the deadline arises from the Budget announcement that the ceiling on employers' contributions for employees earning more than £13,780 was to be removed. This is effective from October 6 and the vice chancellors have been advised that unless a settlement is reached by then not only salaries from that date but the back pay from April 1 will be liable for the higher contribution.

They calculate that the cost in extra contributions could be as high as £1.5 million and the CVCP is to advise universities later this month to increase the salaries of all groups of staff who have yet to settle by up to 4 per cent on account to remove the risk of the back pay being affected.

"It would be nonsense to let £1.5 millions go just like that," an official said.

Management sources were at pains to point out this would not be an interim payment but protective action to safeguard university resources from unnecessary loss.

Estimates of the size of the saving vary – the AUT believes it is about £800,000 and despite reservations about the creation of a precedent accepts it is a sensible step. Manchester University's council has already authorized vice chancellor Professor Mark Richmond to add 3 per cent if no agreement has been reached by September.

There was no demand during this week's meeting of Committee A for the independent chairman, Sir Alexander Johnston, to make a ruling on the award – the equivalent of arbitration. The employers who have not shifted significantly in negotiations, have previously suggested this would provide the way out of the deadlock.

But the AUT has consistently argued there is scope for further negotiation.

A vintage choice – Dr John Brown, newly-appointed head of Lancashire Polytechnic's combined studies programme and vintage car collector, has to pick from no less than five meticulously-kept vehicles for his daily drive to work. He will be running one of the polytechnic's most flexible courses, which enables about 300 new students a year to choose from a wide range of arts and science subjects.

NERC faces 'on the cheap' survey row

by Jon Turney
Science Correspondent

The Natural Environment Research Council is accused of trying to get geological surveying done on the cheap by university scientists, who are being invited to tender for work normally done by the British Geological Survey.

The new row comes on top of a series of recent criticisms of the council's treatment of the earth sciences – which will shortly lead to a joint inquiry into geological surveying in Britain by the NERC and the Advisory Board for the Research Councils.

The BGS is by far the largest NERC institute, with an annual budget of over £25 million a year, and has recently been short of funds for strategic geological surveying of the British Isles – one of its prime functions.

The NERC wrote to all university geology departments in June inviting tenders for basic geological survey work. The letter said the council considered mapping work could be done using research students or research assistants, and did not envisage meeting full economic costs from NERC funds as the dual support system relies on a significant input of a University Grants Committee funds for university research.

Professor Michael Audley-Charles of University College, London, chairman of the committee of heads of university geology departments, said this week the scheme was obviously designed to do the work on the cheap. He felt strategic mapping should be handled by the professional staff of the BGS, not by university research assistants.

Other geologists have already written to the council attacking the scheme. Professor Michael Russell, head of the geology department at the University of Strathclyde, has written saying the areas of Britain as yet unmapped require considerable experience for their interpretation and do not offer problems suitable for postgraduate theses.

However, Professor John Murray of Exeter University said his department would be bidding for new contracts, and had seen a number of research students produce good theses based on earlier work for the BGS.

Staff at the BGS headquarters in Nottingham say the Exeter work is more specialized than the basic mapping now envisaged, and they claim that survey maps produced in France using university staff are of poor quality.

International comparisons of geological mapping will figure prominently on the agenda of the forthcoming

NUS backs South African boycott

Universities and colleges in Britain face a campaign for an academic boycott of South Africa in the early weeks of the new academic year.

Other aims of the drive to isolate South Africa and its universities are: a renewal of the attempt to persuade institutions to sell shares in companies with South African holdings, and exclusion of companies recruiting for employment in South Africa from the annual "milk round".

A boycott would be expected to cover academic exchanges, and the purchase of South African products as well as disinvestment and discouragement of recruiting.

Details of the campaign have not been worked out but there have been preliminary discussions between the National Union of Students and the London-based Anti-Apartheid Movement in anticipation of a high level of student interest in the issue when universities and colleges return from the summer vacation. The NUS executive has decided in principle to place high priority on the campaign and a day of action has been agreed for October 24.

NUS and the AAM share the aim of restoring South Africa to the centre of the student political stage. AAM's executive secretary Mr Mike Terry said: "We intend to bring it back to the top of the student union agenda."

The AAM wants to see the notion of an academic boycott written into the policies of universities and colleges, following the pattern adopted by a number of universities in Europe.

The Association of University Teachers has adopted a boycott of academic appointments since 1980 and its members on senates and courts might be expected to support the campaign.

It was an alliance between NUS and AAM which led to the last mass drive for disinvestment in the 1970s. A number of universities, including Bath and Warwick, disposed of all their South African holdings, while several others sold shares in major investors but did not adopt a total disinvestment policy. They and another group of institutions such as Durham which refused to sell, are to be the main targets of the renewed campaign.

A number of companies are said to be using the milk round to recruit graduates for employment in South Africa and institutions may be pressurized to follow Sheffield University's example and refuse careers facilities for South African recruitment.

The AUT has been supporting demands for the Science and Engineering Research Council to end its connection with a telescope installation near Cape Town. Earlier this year the SERC decided to suspend the arrangement under which it paid £330,000 a year for 35 per cent of the observation time.

Art prepares for 20% cuts

by John O'Leary

Far-reaching changes have been proposed for the teaching of art in polytechnics and colleges in anticipation of cuts of up to 20 per cent in student numbers.

The art and design group of the National Advisory Body has issued a discussion document which warns that, unless the Government increases its support for public sector higher education, a number of courses will close as a result of the NAB's planning exercise for 1987/88. Although design courses under art or the performing arts will face 20 per cent cuts on current assumptions.

The group put the case for the structure and balance of art provision to be broadened. "This proposition implies that provision within the art programme should offer, in addition to specialist courses in fine art, courses providing appropriate study and practice and potential artist/craftsperson, as well as more general courses for those seeking a broad understanding of the visual and applied arts," the report says.

Research funding, 16

letters to the editor

I try in this column not to linger on my own subject but it is my subject and possibly more than many others it is impossible to escape from. Once you become interested, let alone involved, in architecture it is a lifelong obsession. Ask any architect's wife. Is he married to me or to architecture? They complain for a few years and then give up bothering.

So I cannot resist taking up a point raised by a correspondent to this paper concerning one of my columns when I discussed a recent report on housing and breathed a sigh of relief that all the evidence was settling down in favour of ordinary two-storey houses rather than high rise flats. Marjorie Bulos of the housing studies group in the Polytechnic of the South Bank writes that "there are many structurally sound and well managed high rise blocks of flats in all the metropolitan areas, and increasingly, major private developers are taking over or building new high rise blocks, many of which are finding a ready market among those with relatively high incomes".

It is a fair balance to the arguments I was making in my column. It also raises two fundamental issues which have been insufficiently recognized by the designers and managers of local authority housing. Those, in Marjorie Bulos's words, are that the blocks should be well managed and are suitable for people with relatively high incomes.

Looking back at my own experience as an architectural student after the war and working for an architect who was one of the pioneers of mixed development including high-rise, I am increasingly convinced that the designers were either thinking of a different social group from those who were going to occupy the housing or believed that we would all soon belong to the same group as a result of the social revolution of which housing was one of the main components. In other words they were thinking of reasonably prosperous middle-class small families keen to live together and behave in a cooperative manner.

The fact is that high flats are suitable for the rich. I have been in many such apartments and very attractive they are. They have all the facilities needed for high living: the lifts work; they have no graffiti, litter or excreta; there is a resident supervisor for the block (a concierge); the whole block is well maintained.

Given the money and the management to satisfy these requirements, there is no reason why high living should not be admirable for well off, single people or small families. What all the evidence shows is that they are quite unsuitable for the working class family with several children – that is, the people for whom they were designed.

Nor is this an English phenomenon. American sociologists, architects and planners have become convinced that high-rise housing is rarely workable for low and moderate income families with children. That comment comes from Paul Goldberger, the distinguished architecture critic of the *New York Times*. I will discuss him in another column. After all, I am obsessed with architecture.

Patrick Nuttgens

Bias against business

Sir, – I was interested by your editorial (*THES*, July 26) on anti-business bias in higher education, and pleased you find the topic sufficiently important to devote so much space to it.

A study which I have undertaken (to be published shortly as "Seeds of bankruptcy: sociological bias against business") demonstrates pretty conclusively that negative prejudice against business is thriving at least in one area of education.

Analysis of O level, A level and introductory degree level course material, examination papers, and textbooks reveals general neglect of and antipathy towards enterprise, industry, sales, and advertising. The attitudes of tens of thousands of students of sociology (including most teachers in training) are hardly likely to be shifted in favour of wealth creation in any sense by this material.

As far as I know, there is no similar study of history, philosophy, English, or others of the humanities disciplines. I venture to speculate that the case is not much better than in sociology.

As for economics, when 364 senior members of the discipline publicly advertise their studied indifference to economic realities, what need is there for research into the ideas they convey to *their* students?

The topic is quite as important as you judged – indeed it may well be crucial to Britain's success and even survival. We simply cannot afford to continue inculcating in young people this philistine aversion to the marketplace. It will not produce socialism – just poverty.

Yours sincerely,
DAVID MARSLAND.
Brunel University.

Sir, – It seems a pity that your leading article on supposed "anti-business snobbery" in higher education (*THES*, July 26) chose to exemplify rather than to illuminate the topic. For example, you write: "The complaint) is that higher education does not acknowledge its responsibility to proselytize for the values of 'wealth creation', today's code for worship of the market in private profit as the only genuine source of national wealth."

Self-indulgent writing of this nature, which substitutes facile caricature for serious exploration of an opposing view, is trivially easy to generate – and to answer in kind – but neither activity contributes anything to the resolution of disagreement. I am sure that there *are* serious questions at issue here, but your article unfortunately failed to throw light on them.

Yours faithfully,
TOM CORLETT,
25 Nower Hill,
Pinner, Middlesex.

Defence research

Sir, – Your editorial applauding the proposal of the Ministry of Defence to invest in research in British universities (*THES*, July 19) has reached the system function at which the increased US military funding research which may lead to a new generation of chemical and biological weapons runs only just below the surface. What is shocking is not so much the MoD's intentions but the somewhat sycophantic enthusiasm with them. You don't explore the reasons for this sudden act of generosity, but would not seem unduly farfetched to relate it to the facts that:

(a) Britain spends a higher proportion of its science and technology budget (over 50 per cent) on military research than any other industrial nation outside the US (compare France's 35 per cent or W Germany's under 12, and Japan's under 5 per cent)

(b) This gross imbalance, at a time of starvation of funds for civil science, has caused widespread concern not only among scientists, as witness the recent House of Commons debate on science, where the Government's own supporters were arguing for a transfer of up to 2 per cent of military research funding to civil research. The result, they argued, would be to transform the outlook for civil science. But clearly what they were hoping for was a transfer to the research councils or even the University Grants Committee. Doing it through the MoD plans, by earmarking funds for projects which interest it, will produce the reverse of the effect the Government's critics were seeking.

You allude in your editorial to the dangers of this move, if only to discuss them. The creation of a military-industrial research complex; the development of programmes of secret research and the need for security clearance for university researchers even if they only extend current technological trends, cannot be so lightly dismissed, by a reference to "justified defence" and "patriotic duty". It is true that MoD research establishments need opening up to critical public scrutiny and that their closed nature probably encourages mediocre science and technology even in terms of the MoD's own mission. But claims of "justification" and "patriotism" are a bit too reminiscent of past legitimations for research ranging from increased toxicity of biological weapons through making more sticky napalm to the nuclear and "star wars" programmes. Not everyone would agree that such research is either justified or in the interests of the people of Britain.

Making the MoD paymaster for yet more of Britain's science is not a way to preserve universities as places which offer space for critical thought. Rather it is likely to serve, as in the US, to stop the mouths of critical scientists with money. The fear of loss of grant is wonderfully salutory to our theoretical classes.

Until now, *The THES* has stood firm in defence of university independence. We deserve better of you than capitulation to the MoD's paltry £10 million.

Yours faithfully,
STEVEN ROSE,
Brewster Academy,
Wolfeboro,
New Hampshire,
USA.

Dark corners

Sir, – Your American correspondent William Norris (*THES*, July 26) thinks that the National Endowment for the Humanities "places a premium on the obscure" in choosing research projects for support, and notes that the subjects of the 60 or so Americans arriving here soon "range from the arcane to the bizarre". Yet the three topics that presumably illustrate his opinion are the history of British courts martial 1793–1815, the manuscripts of Abraham Cowley's poetry, and the evidence of religious visions in the 15th century.

Obscure these may be, in the sense (not Mr Norris's sense, I think) that they are unstudied areas of darkness (*obscurities*) in which light needs to be shed: many worthwhile research projects are. But arcane, bizarre, or somewhere between?

Mr Norris's attitude to these topics is not even positively philistine: it is just ignorant. Arts teachers struggling (a) to enable their subjects to survive and (b) to retain the possibility of research in their jobs surely have enough problems without being told in your columns what funny subjects they are interested in. After, all, Sir Keith may read *The THES*, and he may even believe what he reads in it.

Yours faithfully,
G. R. RASTALL,
5 Albert Grove, Leeds.

Degree data

Sir, – So Mr Bourner of the Brighton Polytechnic database can explain our previous year's results (*THES*, July 26); through a process known as "subject norm referencing" we perpetuate an agreed view about the proper distribution of classes in our subject.

Students of single honours history at Newcastle University who obtained "good" degrees comprised 33.3 per cent in 1981, 54.3 per cent in 1982, 29.5 per cent in 1983, 42.0 per cent in 1984 and 53.3 per cent in 1985.

Let Mr Bourner explain 1. what exactly is the subject norm in the case of single honours history 2. how exactly did subject norm referencing work in the case I have given and 3. what proportion of our students will obtain a "good" degree in 1986?

Yours sincerely,
DR M. D. PUGH,
University of Newcastle upon Tyne.

Double bind

Sir, – There arrived on my desk recently two missives from the administration, prompted by inquiries from the University Grants Committee. The first, headed "Shift to Science and Technology" required further information about a potential doubling of the size of my department. The second, headed "Planning for the Late 1980s", sought to know how I would cope with an 18 per cent *reduction* in funding.

Yours sincerely,
D. W. BARRON,
University of Southampton.

Freud's fall

Sir, – Mr Kahr mentions my soon-to-be-published book on *The Decline and Fall of the Freudian Empire*, and goes on to state that "all the evidence suggest *overwhelmingly* that the Freudian empire is neither declining nor falling – it is growing and strengthening" (*THES*, May 31).

It all depends on what is growing and what is strengthening. As Kahr correctly points out, literary people, artists and others are certainly very taken with Freud's work, as are many teachers, social workers, probation officers and others who have to deal with people and their problems, without having any proper psychological training.

Freud: fairytales

It is among leading psychiatrists in the United States and the United Kingdom, experimental psychologists, philosophers of science and others who have seriously concerned themselves with the Freudian opus that there has been considerable disenchantment over the years, so that now very few would take the claims Kahr makes at all seriously. Freud's methods of treatment not only do not work; they often make patients worse, as has been established eg by Hans Strupp. Typically, Kahr quotes a couple of books, "to attest to the benefits derived from psychoanalytical therapy"; he fails to quote those who suffered its deleterious effects, such as S. Sutherland has described in his book *Breakdown: A Personal Crisis and a Medical Dilemma*, or the numerous books detailing the abysmal failure of psychiatrists throughout the world to find any evidence to support Freudian claims for successful treatment.

Let us face the fact that Freud is popular among the *literati* because he himself was not a scientist, but a talented teller of fairytales. As Peter Medawar has pointed out: "Psychoanalysis won't do. It is an end product . . . like a dinosaur or a Zeppelin: no better theory can ever be erected on its ruins, which will remain forever one of the saddest and strangest of all landmarks in the history of 20th-century thought."

Yours sincerely,
H. J. EYSENCK,
Institute of Psychiatry,
University of London.

Critic's duty

Sir, – Muriel and Peter Seltman (*THES*, July 26) say in their letter that the tones of my review of their book called *Piaget's Logic* reflected "a contemporary belief that mankind's most profound problems can be solved with a length of wire, a couple of switches and an updated abacus". In so doing they give an excellent example of the woolly and obscure generalizing, overstatement, and misdiagnosis that characterizes their book.

Whatever the merits and demerits of their thesis, as a book it is just very badly done, and I felt it my duty to say this in the review.

A book that is so wilfully obscure and so pretentious does not, in my view, deserve the kind of detailed attention that they clearly believe is their due.

Yours faithfully,
JAMES RUSSELL,
Reader in psychology,
University of Liverpool.

Voluntary help

Sir, – Students of the development of adult literacy and basic skills provision should not be misled by Maggie Richards' statement that "the use of voluntary organizations has declined" ("Reading between the lines", *THES*, June 14). The annual statistics certainly show a decrease in the number of students in voluntary sector provision, but what they do not show is the continuing influence of the voluntary organizations in developing the variety and the quality of opportunities open to potential learners.

A major share of the most important innovations over the past decade have been borne out of the work of the voluntary sector and have subsequently become widely adopted as good practice. Perhaps most important of these has been the success in putting into effect the idea that students should have a substantial element of control over their own learning and associated policy.

Furthermore, while the statistics may show the voluntary sector reaching fewer people, the reality is very different, with projects increasingly acting as a resource for a wide range of other local groups of the type described in your article. People in these groups are taking initiatives which reach far beyond traditional forms of tuition in their ability to make the use of literacy a more relevant and active force within their own communities.

We in the voluntary sector commend the Government's initiative in allowing the Adult Literacy and Basic Skills Unit to help voluntary organizations develop this type of work. The next few years hold out some exciting possibilities and the voluntary sector, far from being in decline, will have a major role to play in making these a reality.

Yours sincerely,
ERIC APPLEBY,
Organizer,
National Federation of Voluntary Literacy Schemes.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

Library spending levels maintained

by Carolyn Dempster

In the face of inflationary price rises and threats of funding cuts, the majority of UK universities managed to maintain or increase library expenditure from 1981 to 1984.

Statistics depicting the marginal step up in spending are contained in the most recent survey conducted by the Standing Conference of National and University Libraries among 71 university or college libraries.

They show that while library expenditure, expressed as a percentage of total university expenditure, fell from 4.5 per cent to 4.2 per cent over the three-year period, the reductions occurred mainly in smaller universities and London university libraries.

SCONUL chairman and Aberdeen University librarian Mr J. N. Smethurst is quick to point out, though, that in real terms the figures mask the true situation. "There has been a real effort by individual universities to compensate for increasing costs, but most libraries have had to cut back their serial subscriptions and have been forced to make further cuts to keep within their purchasing budgets," he said.

In May this year, Aberdeen introduced a £35,000 cut in periodicals and serials, "to bring us back on to an even keel," said Mr Smethurst.

The SCONUL tables also highlight how libraries have used their grants to protect acquisitions and have attempted to balance staff losses with the introduction of new technology, thereby providing a better service.

But with imminent cuts in government funding, the situation is bound to worsen, forcing libraries into cuts to the detriment of both teaching and research, the survey emphasizes. "Cuts in university funding in real terms leading to further cuts in library funding in real terms cannot but harm the development of a library service."

The costly introduction of new technology coupled with maintenance, binding and inter-library loan expenses pushed up operating costs by £3 per student in the 1983/84 academic year. Without the investment in technology and improved services, professional staff costs would undoubtedly have been much higher, concludes the SCONUL report.

London University librarian Mr V. Parry expects reductions on much the same scale in the areas of staffing resources, acquisitions and conservation over the next five years as the 2 per cent per year research funding cuts take effect.

"I'm surprised the SCONUL statistics showed an increase in university library expenditure, because it was my impression that overall there were reductions in most university libraries," he said.

Hot and sweaty runners, 140,000 of them, took part in the 15th annual Sydney to Surf road race last weekend.

And heading them all at the finish was Hugh Jones, a post-graduate studying at Liverpool university. He ran the 14 kilometre race from the city centre to Bondi, a suburb by the beach, in 41 minutes 48 seconds, 14 seconds faster than the next man.

Jones, who has a Liverpool degree in town planning, is working for a PhD on housing finance. It was his first serious race since the Olympics when he finished 12th in the marathon, after which he had to have an operation on one of his Achilles tendons. He won the London marathon in 1982 and his next will probably be in Peking at the end of September.

Sheffield to shed 250 jobs

by Peter Aspden

Sheffield University is to shed up to 250 jobs under a scheme of early retirement and voluntary redundancy which has been agreed by the university council.

Letters are being sent to all members of staff giving details of the scheme, which will only be available until mid-November. In the case of academic staff, the terms of the scheme are similar to the Government-funded package introduced to enable universities to cope with the 1981 cuts.

The adoption of the new scheme follows detailed talks with campus trade unions, which successfully sought an assurance that no suggestions should be made to individuals that they consider applying for premature retirement.

The university has also refrained from identifying a specific number of job losses needed over the next few years to deal with its shrinking income, but has said that the number will need to be "substantial".

The university treasurer, Mr James Eardley, told council members that the financial position would be "impossible" by 1990 if no steps were taken to achieve savings.

He said a recurrent saving on non-staffing expenditure of about £1 million planned for 1985–86 could not be sustained indefinitely, and that assumption had been built into the finance committee's projections.

Sheffield first warned of job losses in June, when a document considered by senate threatened the loss of 435 jobs by the end of the decade to cope with a cut in its resource base of 15 per cent over the same period.

Protests from trade unions over the suddenness of the announcement followed, and council agreed to postpone consideration of the document until more detailed consultations had taken place.

Council has now accepted the need for the job losses, having been told by the vice chancellor, Professor Geoffrey Sims, that the university was facing a projected deficit of £1.86 million on its recurrent budget for this financial year.

Computer aid for careers advisers

A computer-based careers guidance system for students in higher education is to be developed by a consortium comprising London University's careers advisory service, Queen Mary College, London, and the computing firm Scicon.

The consortium is hoping to develop and pilot a prototype system over three years, at a cost of £630,000. The scheme has been conceived by the Association of Graduate Careers Advisory Services, and will help students assess their suitability for particular jobs.

The system will include databases containing details of up to 500 occupational areas, postgraduate education and training opportunities, information about employers who recruit graduates and lists of vacancies.

Special programmes will also help students evaluate their skills, interests and values, make career-goal decisions and form a plan of action to find jobs.

The aim of the system is to form a national network across all institutions of higher education, and to enable professional careers guidance staff to concentrate on the more difficult and individual aspects of the counselling process.

The National Advisory Body and the University Grants Committee have each pledged £20,000 towards the cost of the project, which will be based at Queen Mary and Scicon's offices in London.

Natfhe loses panel vote

The college lecturers' union is to lose its vote on the Burnham primary and secondary committee under a shake-up of union membership proposed by Sir Keith Joseph.

But the National Association of Teachers in Further and Higher Education should retain observer status on the committee, "to preserve this important working link" with the further education committee, he recommends.

Natfhe leaders predicted that the move would increase the workload on the further education committee and create conditions in which the arbitration would be more difficult to avoid than in the past.

The Secretary of State's proposals involve the reduction of the overall size of the primary and secondary teachers' panel, through the loss of Natfhe's vote and the reduction of the largest union, the National Union of Teachers, from 16 to 13 seats.

FE unit's £1 million cut rejected

by Patricia Santinelli

The Secretary of State for Education has rejected his officials' advice to cut the Further Education Unit's budget by £1 million by 1988. Instead, he will review its funding annually.

Sir Keith Joseph's decision follows a meeting with the FEU board of managers last month, when Sir Keith apparently expressed some surprise at the range of work undertaken by the unit, which includes the updating scheme PICKUP. He acknowledged the FEU was being "saved" to build up that particular programme.

Sir Keith had been originally advised by his officials, in particular Mr Roy Walker, under secretary in the Department of Education and Science's further and higher education branch 2, that the FEU budget should be reduced from a planned £2.4 million to £2 million for 1985/86 and then allowed to fall to £1.7 million by 1988, some £1 million less than scheduled expenditure.

The issue goes back to March/April of this year with an exchange of letters between Mr Walker and Mr Joss Owen, chairman of the unit which implied some agreement about running down the unit, in view of the work now being undertaken by the Further Education Staff College, HMI and the Manpower Services Commission. Since then, however, Mr Owen has been fighting for the survival of the unit.

As it is, the FEU will only get £2 million this year instead of the planned increase, and it points out that it regards annual funding as a mixed blessing because it is afraid that its freedom of action will decrease, and finances could become so volatile as to prevent the unit honoring ongoing commitments or maintaining consistency.

The board will make it clear to Sir Keith in the autumn that this level of funding will force cuts in mainstream vocational work, information technology and multicultural education, all areas that the Secretary of State and the DES wish to see built up.

Art prepares for shortages

continued from front page

Such a policy would require increased opportunities for the study and practice of art below honours degree level and on a non-specialist basis, the group adds. Courses would be broadly-based and might have the potential to be linked with others.

Although the three-year honours degree would continue to be of immense benefit to many students, the report suggests that a significant number of students would benefit from an alternative form of provision. Two-year diploma courses, with the possibility of credit transfer, are advocated as one initiative to this end.

Degree courses should be broadened to get away from "narrow and unrealistic vocationalism" and some existing fine art degree courses could be merged with more general courses. The first two years could lead to a diploma with some students specializing for a further year.

The number and size of specialist art degrees would be related more directly to likely career prospects, but post-graduate courses might be expanded to compensate for a reduction.

The report suggests a number of criteria, including geography and access, quality and links with postgraduate study and other disciplines, for deciding which institutions should be given the sought-after specialist courses.

Responses to the discussion document are being sought by the end of November to enable a policy statement to be issued in April next year. The reshaping of provision could then begin in 1987/88.

Provision for art education in higher education. Free from the NAB, Metropolis House, 22 Percy Street, London W1P 9FF.

Kingman runs out of time on SERC five-year plan

The Science and Engineering Research Council is struggling over the production of its first corporate plan – a five-year prospect of the council's work which should have been issued last month for discussion over the summer.

Council officials hoped for approval of the draft plan at either of the last two full council meetings, in June and July, but both rejected the current version as, in the words of one member, "a description rather than a plan". Industrial members of the council, in particular, argued the document was weak on future objectives and priorities, and dwelt too much on existing work.

The new delay signals the end of Professor John Kingman's hopes for a radical reshaping of the SERC's future commitments during his term as chairman, which finishes at the end of August. Last October he announced a complete review of SERC spending, intended to lead to decisions on "major surgery" early this spring. This was then deferred until the corporate plan was produced in the summer. But the plan will now go before a new council, with seven fresh members, in October.

The SERC is also waiting to see how changes in international exchange rates will affect its spending plans for next year. The pound's climb against the dollar and European currencies up to last week could have given the SERC a theoretical bonus of over £4 million from its payments to overseas laboratories.

However, the rate has begun to slip back since then, and SERC officials stress that it will be several months before they can feel confident of benefiting from a stronger pound.

New SERC members, page 6

Council to appeal to NAB over teacher training decision

Hertfordshire has been taken aback by the decision of the National Advisory Body's board last week to end all teacher training provision there.

Mr Donald Fisher, the county education officer, had suggested that Hertfordshire College of Education could be closed by 1986, provided NAB agreed to transfer teacher training to Hatfield Polytechnic.

But instead the board decided to accept the closure of the college and to reject the transfer of courses to the polytechnic on the grounds that it has no history of teacher education.

The county council said this week it was stunned and distressed by the decision and was deciding what further response to make. Pressure would undoubtedly be put on the NAB committee before it met in September.

"But the council is unlikely to change its strategy and ask for the retention of the college. Faced with the prospect of losing initial teacher training, we decided the only option was transfer to Hatfield. We hope that the committee or the Secretary of State for Education will overturn the board's decision," said a spokesman.

In the event of IT training courses being lost, the county would look very carefully at the transfer of inservice provision to Hatfield Polytechnic. The nearest colleges to offer such provision are Chelmer Institute, Homerton in Cambridge and Middlesex Polytechnic.

Mr Geoffrey Brass, the National Association of Teachers in Further and Higher Education's representative for Hertfordshire, said he had not been aware of Mr Fisher's latest proposals for the closure of the college. A meeting to decide on a plan of action was expected to take place at union headquarters yesterday.

"Our policy is one of merger with Hatfield Polytechnic. We agreed this in the last six months. Before that we supported the continuation of the college as a free-standing institution. We now feel that we have been left in a very bad position compared to other colleges and have been offered as the sacrifice to satisfy Sir Keith Joseph's policy of rationalization," he said.

It was revealed this week that a proposal was tabled at last week's meeting of the NAB board to remove teacher training courses from Humberside College of Higher Education once North Riding College had been given its reprieve. The move, supported by civil servants on the board, was ruled out of order on the grounds that the college and its authority had not been notified of the proposal in advance.

Colleges were due to receive revised teacher training targets this week. The larger centres of primary training will lose between 10 and 20 places each if the NAB committee confirms the reprieves proposed for Portsmouth Polytechnic, the College of St Mark and St John, and North Riding College.

Places have been taken from institutions throughout the public sector, although not from smaller training centres whose viability might be threatened by further cuts. After talks with officers to the Voluntary Sector Consultative Council, it was decided not to ask the voluntary colleges to provide all the places necessary to save the Colleges of St Mark and St John

DON'S DIARY

MONDAY

Driving in, I set ambitious goals for the new week: (1) to tidy my desk, and (2) to make major progress on the Big Paper presenting the past year's collaborative research with a colleague at the nearby *observatoire*. My contract was recently extended to cover the three summer months, and to celebrate I dropped the big paper for a few weeks to write a quickie analysing some old satellite data. The referee's report has come. The usual butterflies as I open the envelope. The referee wonders if there is not something more recent on the galactic acceleration than the 1956 results adopted in my analysis. This is fair enough, and needs investigation.

Telephone the university personnel office for various certificates necessary for the three-month extension of my *carte de séjour*. The police want more documents at each renewal: 19 separate pieces of paper this time.

A Korean visitor to the lab has had difficulty making photometric observations in Busan, and we have arranged to discuss this. But he fails to return from a weekend train-trip to Paris, so I start organizing scraps of big paper draft by typing them into the text processor on the lab's new mainframe. The text processor works fine, but is incompatible with the non-standard lineprinter, and I can't print out all characters. Typewriters have advantages!

Leave work early, but on the *autoroute* there is a jam like I have never seen, and it is 7pm before I am home. The TV news reports a big train crash. My heart skips a beat for my missing Korean colleague. But the accident is not on the Marseilles line.

TUESDAY

Go to the *observatoire* for a meeting with my big paper coauthor, who is observatory director. I am early, so I scan *Nature* and *Physics Today* for jobs. There are none. My coauthor arrives looking surprisingly cheerful considering he has spent 2½ hours in the dentist's chair. He drops the bombshell that none of the numerous possibilities he saw of temporary money for me for next year will work. This is quite a blow, as I had been counting on this safety-net in case I don't find anything permanent.

We discuss our big paper. In part it is designed to reinforce our claim for some observing time on the space telescope, due for launch next year. We have high hopes of an allocation because our project requires all three of the telescope's unique capabilities: high angular resolution, great sensitivity, and ultraviolet response. Because space telescope will be 15-fold oversubscribed, it will be very prestigious to be awarded time, and if we succeed, perhaps I can use it to buy me a job. In a project costing $1.5 billion, surely there are a few pennies for me?

Back at the lab, the deputy director has received a request for a letter of recommendation on me, and asks my help in writing it. I find this very difficult, but rough out a skeleton of possible topics. I hope he writes something convincing because, given the Green Paper, the job concerned is likely to be the last in the UK for five years. I hunt in the library for more recent work on the galactic acceleration. No sign of my Korean colleague.

WEDNESDAY

I make some calculations and revise the quickie paper. A visitor from Berkeley gives a talk about a prop- The arrangement of the various optical elements is clarified when he produces a large cardboard model. I wonder how he managed with it on the plane?

My Korean colleague reappears. He is fine. High-life in Paris was more attractive than photometry in Marseilles.

The *THES* has arrived. No jobs. "Differential pay plan for dons moves closer" says the headline. I am all in favour of rewarding people on results, as in the US, where an important part of keeping people on their toes is tenure, but only for nine months out of every 12. Academics must scout around for summer money. But my letter to Sir Keith suggesting this (easy to implement – no pay rises for three years) received a stony reply.

The TV news announces the death of a member of the Académie des Sciences. Would the BBC do the same for an FRS, or a British Nobel laureate? Spend the rest of the evening typing revisions to the quickie, ready for sending off tomorrow.

THURSDAY

I begin a literature search on the galaxies that I hope to observe with space telescope. The afternoon is dedicated to my Korean colleague and his photometry problems, and in the early evening I achieve one of the week's goals and tidy my desk.

At 7.30 my wife arrives in the car, and we go on to dinner with colleagues from the physics department. I did some teaching of engineering students during the year. They were a mixed bunch, and although one has obtained a *mention très bien* (the first in 10 years), half have failed.

FRIDAY

Finish typing scraps of big paper draft into the mainframe. Minor rather than major progress, but at least it *is* progress.

Sift my stack of job rejection letters to find the few courageous ones where the university has named the successful candidate. This gives five names. What have they got that I haven't? I run them through the ESA-QUEST database to list their publications. How do appointments committees evaluate articles? (They surely don't read them.)

My five winners have between five and 20 major papers each. I have nine. But different papers have different lengths and may have several authors. Dividing paper lengths by author numbers results in totals between 13 and 139 pages. I score 72. So publications are not my problem; I too decline to read my winners' articles, but their titles and by-lines give a clue to the secret of success. It is being already associated with the departmental research. No room for new topics!

The TV news reports that the launch of Spacelab-2 (devoted to astronomy) aborted three seconds before lift-off.

SUNDAY

Bastille Day. Superb fireworks in Aix. I like the rockets which leave vertical and then horizontal orange trails, like giant gantries in the sky. A massive launch of whistling, sparkspitting "aeroplanes" receives deserved applause. Other rockets leave a wake of light, intense stars that brighten and fade, Disney-like. To finish, bouquets of coloured fire open into the heavens, like celestial fan vaulting. All this light – not a night for observing!

William Tobin

The author is assistant-associé in the physics department, Université d'Aix-Marseille I, and researches in astronomy at the nearby Laboratoire d'Astronomie Spatiale.

Principal 'sacked' from NAB

by John O'Leary

Dr Harold Silver, principal of Bulmershe College of Higher Education, is being replaced on the National Advisory Body teacher education group, which had the controversial task of recommending the withdrawal of teacher training from some colleges, only six months after being reappointed for a three-year term.

Dr Silver walked out of a meeting of the group in May, when the detailed distribution of places was under discussion. He had argued that allocations should not be finalized until it was clear whether institutions given extra training places would have to make compensatory cuts in other areas. He believed such cuts would prove disastrous for some colleges.

In June Dr Silver received a letter from Mr Christopher Ball, chairman of the NAB board, regretting that he had left the meeting and adding: "I regret therefore the fact that you find yourself unable to continue to participate in the work of NAB but would like to

Dr Silver: left meeting

take this opportunity to thank you for your contribution in the past."

Dr Silver replied immediately that he had not resigned, merely withdrawn from the meeting because of his disagreement with the procedures and assumptions of the exercise. Other members of the group have confirmed that no resignation was offered.

However, last week Dr Silver received a second letter from Mr Ball saying that he had given much thought to his response. "I have to confess that I am puzzled by your withdrawal from the meeting of TEG, and at a loss to interpret it if not as a resignation. In any event, I have decided to proceed to make a replacement appointment," Mr Ball wrote.

Appointments to the NAB's working groups are in the gift of Mr Ball and Dr Silver has decided not to pursue the matter. He said this week: "Mr Ball has refused to accept my assertion that I have not resigned, preferring to 'interpret' my actions. I have been sacked."

Mr Ball declined to comment on the issue this week but confirmed that he was appointing a replacement. "Dr Silver must take his own view of his position," he said. "I have made clear how I see the matter in my letter to him."

Rates rules challenged by Scots

by Olga Wojtas
Scottish Correspondent

Scotland's eight universities are planning to challenge the basis of their rates valuation which they claim is unfair compared to south of the border.

The Scottish institutions have been unhappy for a long time over higher valuations, but the situation has been worsened by this year's revaluation, which has increased rateable values by an average 2.75 per cent. It is some 11 years since revaluation in England.

The total rates bill for the Scottish universities is £20 million, including rates on hospital premises. Not all the university rates notices have been processed yet but Edinburgh, for example, could face a leap from £4,100,000 to £5,700,000.

Mr Alan Weir, Glasgow University's finance officer, and secretary of the universities' joint rating and revaluation committee, said the universities had always been deburred from comparison with England in the past, but hoped that last year's Rating and Revaluation Amendment (Scotland) Act might give a legal basis for "achieving justice."

The universities are currently taking legal advice and plan to appeal by the end of September. It is possible that Stirling may be chosen to fight a test case since comparisons with green field campuses in England show they have a considerably lower valuation.

The universities claim that they are a special case when it comes to the rating system, compared to offices and factories, and that they should be considered on a UK basis.

Mr Weir said the University Grants Committee had warned the universities that they must do all they could to minimize their rates liability. "Rates are taking up more and more of the UGC's budget, and in Scotland are wildly in excess of the cash available," he said.

Uncertainty surrounds end to monkey research

Uncertainty and controversy continue to surround the joint research programme at the universities of Glasgow and Pennsylvania involving experiments on monkeys' brains in spite of a statement from Glasgow announcing the end of the work.

Professor Gary Francione, of the American university's law department, claimed in Glasgow this week that he had seen a grant application for the experiments to continue. The work was halted last month when federal funds for the project were frozen after an investigation by the United States' National Institute of Health.

The allegation was made at a meeting called by the Scottish Anti-Vivisection Society who along with their counterparts in the United States have consistently campaigned to have the research halted.

Professor James Hume Adams of Glasgow's dept of neuropathology reiterated his statement that the research involving monkeys has definitely come to an end. It was common knowledge, he said, for grant submissions to be made considerably in advance of project start dates. The pennsylvania application had been made before it had been decided to halt the experiments and carried no sinister overtones.

According to Professor Adams, Dr Thomas Genneralli, his opposite number in America, had confirmed in writing that the Head Injury Clinical Research Centre at Pennsylvania would conduct no more of the experiments.

The Glasgow research team maintain that the work has reached a natural and successful conclusion, yielding important results on the cause of coma and brain damage after head injury.

Although the experiments on monkey brains will not be resumed Professor Adams intends to continue to collaborate with the University of Pennsylvania in research requiring experiments on guinea pigs and squirrel monkeys.

Bright outlook for autumn

It's simply no use going away on holiday until autumn this year. The reason? An Indian summer in September, according to Emeritus Professor Roland Davies of Exeter University who bases his prediction on weather forecasts by computer model.

The former professor of mathematics at Exeter developed the model in 1980 and now claims to be able to compute mid-winter conditions based on two simple sets of data: sea surface temperatures in the tropics, and Arctic air flows.

"Summer periods are harder to predict because there is no strong circulation, and obviously there will be local variations", he says. But the computer model has already demonstrated the feasibility of forecasting general trends, accurately pinpointing 12 out of 17 severe winters.

Council should investigate sex discrimination

by Adriana Caudrey

The director of Lancashire Polytechnic, Mr Eric Robinson, has called for his local county council to launch an immediate internal inquiry into the extent of sex discrimination in its colleges and schools.

His demand comes days after Labour-led Lancashire council was found by an industrial tribunal to have repeatedly rejected a deputy head teacher for a series of headships because she was a woman, and was ordered to pay her £600 compensation.

Mr Robinson wants the council, which is currently drawing up an equal opportunities policy, to investigate the circumstances surrounding Mrs Vera Chadwick's repeated rejections for the post of head teacher. He also wants it to reopen the files on Mrs Pam Ackroyd, who was denied an interview for a lecturer I post at Blackpool College, although she was a well-established part-time employee. He has suggested that the polytechnic should play an active part in such an inquiry.

Although Mrs Ackroyd's complaint of sex discrimination did go before an industrial tribunal, it was not fought by the county council. Instead the council agreed to pay her £500, without accepting liability. They also apologised for having mistakenly instigated a police inquiry into her.

Mr Robinson believes that these cases suggest there may be victimization of other women within the Lancashire education service, but that they may not have dared to protest publicly.

Mr Robinson argues that the council should conduct its own investigations into any alleged sex discrimination, and should set up a grievance procedure specifically to deal with these matters. But he believes it currently lacks the expertise, commitment, or staff to do this. He suggests that the council could draw on the experience of a number of polytechnic staff who have been given special responsibility for safeguarding equal opportunities.

He points out that if the council was able to handle its own investigations, cases need not end up before an industrial tribunal. This would not only save the council the cost of compensation money, but also that of allowing several officers to devote time to preparing for a hearing. Mr Robinson also makes this point in the response which he is preparing to the council's draft equal opportunities policy.

He believes that the recent tribunal highlights inadequacies not only in the council's current position, but also in its draft policy. He added that the tribunal had confirmed the general impression that Lancashire had a bad record on sex discrimination.

One countywide fact to emerge from the tribunal was that during the period they were investigating only two out of 104 mixed secondary schools had a woman head. One of these, a nun, was the head of a Roman Catholic secondary school.

The 'non-scientist' in charge of report on private funding

by Jon Turney
Science Correspondent

The Advisory Board for the Research Councils has entrusted preparation of its forthcoming report on private funding for research to the man who describes himself as the board's token non-scientist. Professor Peter Mathias, whose committee will put the finishing touches to its report over the summer, stresses he is not even a social scientist, but a historian.

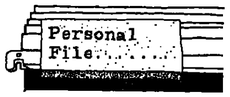
However, as professor of economic history at Oxford, he is well placed to assess the role of academic research in industrial development. He is one of the independent members of the 24-strong ABRC, and his knowledge of industry, his academic connections and his interest in private funding – signified by his membership of the academic advisory council for the University College of Buckingham – all helped guide the board's choice of chairman for the working party, announced earlier this year.

The other members of the group are Mr Ronald Artus of the Prudential Corporation, for expertise in banking and venture capital, Dr Walter Bodmer, research director of the Imperial Cancer Research Fund, one of the largest research charities, Mr Martin Wood of Oxford Instruments and the board's chairman, Sir David Phillips.

Professor Mathias is reluctant to forecast the group's conclusions, but their general approach has been to try to chart the areas where non-government sponsors might pay for research in fields now supported by the ABRC – and to see if they can contribute to a strategy for complementary public and private sector funding.

The study was requested by Sir Keith Joseph, Secretary of State for Education and Science, and is an indication of growing interest among ministers in the potential for channelling industrial cash into academic laboratories. Both Sir Keith and Mr Geoffrey Pattie, minister for information technology at the Department of Trade and Industry, have recently met leading industrialists to discuss the importance of the country's science base.

As Professor Mathias puts it, everyone is at it in this area. The ABRC study will overlap considerably with a joint ABRC/Advisory Council for Applied Research and Development report on academic-industrial links issued two years ago.



And Professor Mathias himself is on a new group set up by the committee of vice-chancellors and principals on universities and industry.

The group's findings will be read closely in the DES, in the light of the board's oft-reiterated advice to increase the science budget, but he believes the purpose of the inquiry is not "to compromise the board's public position on funds".

The group won a researcher on secondment from merchant bankers Morgan Grenfell for three months. With her help, Professor Mathias hopes they can draw a detailed map of where private money goes now across the research spectrum, which industrial sectors it comes from, and how much comes from large and small firms.

The ABRC hopes Sir Keith requested the study because he wanted to increase the flow of research cash, rather than trim the allocation from the exchequer. Certainly companies, foundations and charities responding to the study group's initiative have all emphasised that any increase in their support should not be the cause of decreases in public funding.

July is the busiest time for independent ABRC members, as they have to assess the competing claims of the five research councils before the board makes its recommendations to Sir Keith on the following year's science budget. But now that is past, Professor Mathias should have more time for his other job for the board.

In between, he is also writing a report on schools and institutions of archaeology for the British Academy, of which he is honorary treasurer. And he is trying to work out if he can accept an invitation to lecture for a term in Geneva next year while retaining his membership of the ABRC.

Double IT boost for Southampton

by Peter Aspden

Southampton University has received a double financial boost from the University Grants Committee and the EEC's Esprit information technology programme.

The UGC has agreed in principle to give the university at least £2.5 million to help towards the cost of a new electronics building. The electronics department, one of the oldest in the country, currently houses its 500 staff and students among 13 different sites.

The university has already raised nearly £1 million for the £3.5 million building, and news of the UGC boost now means construction can go ahead in two years' time.

The university's chancellor, Earl Jellicoe, announcing the funding, said the award of such a large sum in the climate of shrinking resources for universities as a whole was a tribute to Southampton's work.

The electronics department recently played host to a prestigious conference of world authorities on integrated circuit technology, which included representatives from the United States and the Soviet Union.

Meanwhile, a research team from Southampton has won a £500,000 grant from the EEC's Esprit IT development programme for work on a "transputer", a powerful microprocessor which contains its own memory and the facility to communicate with other transputers.

Dr Chris Jesshope, one of the research team from the electronics department, said the EEC funding would enable the university to put 20 years of research into the new project.

● The University Grants Committee has announced the distribution of the extra £9.75 million it has provided to enable universities to improve the funding of computer science.

The largest grants have been received by London University (£1.35 million), Manchester University and the University of Manchester Institute of Science and Technology (£740,000 between them) and Leeds University (£340,000).

Cuts prompt early retirement

A UMIST professor said that "pointless" government planning exercises were among the reasons which had caused him to seek early retirement at 60.

Professor John Hearle, head of UMIST's department of textile technology, said that the UGC was calling for research plans every 12 or 18 months, often asking for the same exercise to be repeated with different parameters.

"We know that the UGC can't evaluate the plans when it does get them, because it simply hasn't got the staff," Professor Hearle declared. "So they just lie buried under piles of paper."

He described the latest programme of government cuts – an average of 2 per cent per annum – as "demoralising" for universities, even though UMIST, as a centre of science and technology, might not suffer so seriously as some other institutions.

Professor Hearle, who has been at UMIST for 36 years, will still be involved in some research there. Meanwhile he is to leave on August 15 for a lecture and consultation tour which will take him to Japan, India, New Zealand and America.

In 1986 and 1987 he will be a visiting professor at the University of Delaware, which has recently been declared a centre of excellence by the US government, with a grant of one million dollars.

Overseas success creates a housing crisis

Stirling University is facing an accommodation crisis because of its success in attracting overseas students.

Senior civil servants, educationists and academics from overseas are going to Stirling in record numbers, the majority attracted by courses in accountancy, business studies and aquaculture. Two senior members of Stirling's staff are currently in Malaysia on a recruiting drive, and around 60 offers have been made for the university's MBA in accountancy.

Mrs Marjory Russell, the university's accommodation officer, said the numbers of overseas students had been building up over the past five years, but this year there had been an increase in offers, with acceptances running above normal.

"There is definitely a risk that we will not find accommodation for all of them," she said. Around 250 new families – are already expected for the coming session.

"In this area to find 50 family houses within a suitable price range would be a remarkable achievement," she said. Stirling itself has 1,800 single residential places on campus with 35 family flats, most of which are already occupied by overseas students.

The university has now appointed someone full-time to seek suitable accommodation around the campus. Mrs Russell said Stirling was a desirable residential area, and there was therefore little commercial letting. Another problem is that Stirling's session begins early, in mid-September, which is still the tourist season in Scotland.

Isolated farm cottages with minimal furnishings would cost around £150 a month, and were eagerly sought by home students, but these would not be to the climate and without transport, Mrs Russell said.

But the university was being asked up to £500 a month for centrally heated modern flats, which overseas students could not afford. "We are desperately looking for accommodation at around £250," said Mrs Russell.

Stirling hopes that local home owners will be encouraged to lease to the university rather than individual students, since this does not create a protected tenancy, and rent is guaranteed and paid in advance. People who might not consider leasing to a group of undergraduates might feel differently about leasing to a senior civil servant and his family, she added.

The university is this session to launch a "Welcome Centre" jointly with Central Regional Council for the children of overseas students, with a teacher who will help their assimilation

Union tries to defuse row over TUC

by David Jobbins

An argument over the composition of the college lecturers' union delegation to the TUC could be defused following a promise by union leaders to try to include officials in the 1986 team.

Officials of the National Association of Teachers in Further and Higher Education are now voting in a ballot to relax sanctions imposed after a plan to include some of them in this year's TUC delegation was thrown out by the union's national council.

Late last month they voted overwhelmingly to boycott the TUC in Blackpool next month and to refuse to carry out preparatory work for the lay delegation which is to attend.

But talks between union leaders and the officials' representatives produced a commitment to present the original formula to national council in time forr the 1986 TUC. Under it, at least three officials would be a full part of the delegation instead of as in the past, attending voluntarily, often in their free time.

Now the 21 members of the Association of Scientific, Technical and Managerial Staff working for Natfhe are reballoting to relax the sanctions to allow Natfhe general secretary Mr Peter Dawson to attend the TUC, and to allow some preparatory work including drafting amendments and representing the union in the vital compositing process to go ahead.

Arguments against including officials centred on their accountability to Natfhe's decision-making bodies, and the risk of conflict of interest between Natfhe and ASTMS policy.

Officials were particularly angered at what they see as the master-servant view of their role implicit in the arguments. It therefore remains unclear whether Mr Dawson will be in Blackpool, where he is one of 24 candidates for 11 seats on the TUC general council reserved for unions with less than 100,000 members.

Cox quits front bench to get back to research

Baroness Cox has stepped down from her front-bench position in the House of Lords, as baroness in waiting, because she needs "the freedom of the back bench, to research and speak and publish."

Lady Cox, who is well-known as an author of the Black Papers on education, and who has also gone into print condemning allegedly left-wing bias at the Polytechnic of North London, was enigmatic about where her main areas of research would lie.

She intends to devote more time to her work with the National Council for Educational Standards, and with the educational study group of the Centre for Policy Studies – a group which she used to chair.

"I would value the opportunity to speak from the back benches again on education," Lady Cox said.

Her five months as baroness in waiting was a three-fold responsibility. It entailed being a Government representative in the House of Lords, a baroness in waiting to the Queen, and Government spokesman on home affairs, education and environment in the Lords.

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Before, during and after: Dr Jack Earls, director of Humberside College of Higher Education, takes a ducking in the college's helicopter ditching simulator before taking up an invitation to visit a North Sea oil rig. The simulator, which lowers its victims beneath the water and turns them upside down, is used in courses run for the offshore oil and gas industry.

King's is heir to Cornwall House site

by Peter Aspden

The new King's College – incorporating Queen Elizabeth and Chelsea colleges – is hoping to acquire Cornwall House on the South Bank by the autumn, creating a new "Thames-side campus" on either side of the river to replace its existing sites.

The college is currently centred in three major locations – Strand, Kensington and King's Road – as well as numerous smaller sites all over central London. Most of these will be sold in the next few years, however, if the Cornwall House move goes ahead.

The Government has already agreed to the college's use of the building, and confirmation by the London University court and the University Grants Committee is expected in the coming months.

The college proposals are revealed in the college's academic plan, following the formal implementation of the KQC merger on August 1. The new college has some 6,000 students in 63 departments across 10 faculties, and will concentrate on a broad base of activities.

The merger, described by Lord Scarman, chairman of the university court, as the "most important development in the sphere of higher education today", is not even yet complete, as talks are still going on between King's and Westfield on future collaboration.

The college's principal, Professor Stewart Sutherland said it would be three years before the first departments started moving into Cornwall House.

He said the college would benefit academically from the merger, giving as an example the new-look faculty of life sciences, which will become one of the major centres in teaching and research in Britain, with both pure and applied biological sciences being strongly represented.

Professionals get tough

The Government's attitude towards continuing education has come under fire from 13 professional bodies who argue that the recent Green Paper, *Higher Education into the 1990s*, displays a lack of commitment to or concrete support for continuing professional development.

The criticisms are set out in a joint letter to Secretary of State for Education and Science Sir Keith Joseph, by the Continuing Professional Development in Construction Group and five other professional bodies.

In it, they express deep disappointment over the Government's failure to take the lead in the promotion of continuing education. "Overall, the words outlining Government support are contradicted by the proposed deeds or lack of deeds. There is no sense of a larger urgency compelled by the economic needs of the country, and the impression is that this area of higher education is of little real interest to the Government," the letter states.

The bodies, among them the Law Society, Pharmaceutical Society of Great Britain, Royal College of Veterinary Surgeons, British Veterinary Association and Royal College of Midwives, stress the need for more positive and supportive Government action, tax concessions for salaried staff whose employers will not foot the cost of course fees and Government funds for the updating of teachers in technical and vocational subjects.

At present, the Professional, Industrial and Commercial Updating Programme funding for the year has been increased to £2.9 million but this is regarded as a minute contribution in the face of the need to involve academia, the professions and industry in CPD schemes.

Hard on the heels of the critique is the announcement by the Department of Education and Science of a £24,400 study of the CPD scheme for chartered surveyors – to be conducted by the College of Estate Management.

The one-year project is designed to evaluate the benefit of updating for surveyors and develop guidelines for the professions as a whole. But while the CPD in Construction Group executive secretary Mrs Elizabeth Layton sees this as a "drop in the ocean", albeit admirable, Sir Keith Joseph expects professional bodies to take the initiative in developing updating policies.

His approach that employers should more fully accept their responsibilities and be ready to meet the costs of updating their staff is further clarified in a letter to Professor Lewis Elton of the Institute of Educational Development, Surrey University.

Sir Keith was responding to Professor Elton's appraisal that the Green Paper may have been "too soft" on employers. He also makes it clear that while the Government accepts an obligation to give a lead in promoting continuing education, the ultimate responsibility lies with the employers.

'Switch' calls jam the switchboard

Paisley College of Technology was inundated by calls from prospective applicants only 24 hours after announcing an extra 85 places in engineering and technology next session, funded by Scottish Education Department "switch" money.

The day after advertising the plans in the local media, Paisley says there were phone inquiries every two minutes, with an additional 200 application forms sent to callers.

January deadline

Comments on the Green Paper must be submitted before the end of January 1986, ministers have announced. The end of the consultation period's a month later than initially indicated by Sir Keith Joseph, Secretary of State for Education and Science.

EEC fees rate

Students from Spain and Portugal will pay tuition fees at the home student rate as soon as their countries join the EEC on January 1, 1986. But they will still have to pay at the full overseas rate for the first term of the new academic year.

Standing firm

Sir Peter Froggatt, vice chancellor of Queen's University, Belfast, has issued a statement expressing the university's determination to resist any proposal to close its school of architecture.

Sir Peter said he was taking seriously leaks of the forthcoming report from a transbinary group on architecture, which is expected to recommend the closure of the Queen's school, together with those at Huddersfield and North East London Polytechnics.

Tycoons wanted

Budding tycoons are currently being sought for the New Enterprise Programme, one of the Manpower Services Commission's adult training and retraining schemes operating in five major business schools. Applicants must be at least 18 and out of full time education.

Labour plans cash for research

An extra injection of public funds into civil research and vocational training is promised in a joint Labour Party/TUC plan for the regeneration of Britain published this week.

The Conservative Government is accused of deliberately encouraging British companies to neglect research and development, and of creating skill shortages by making it difficult for the Manpower Services Commission to operate properly.

"A priority for any credible industrial policy must be to reverse the run down in civil research and development that is crippling our economic prospects," the policy document says.

Further education would be given greater resources to expand training with special programmes for women: *Jobs and Industry: a new partnership, a new Britain*, published by the TUC and the Labour Party 60p.

Three vital ingredients in recipe of marketing success

by Patricia Santinelli

Contrary to recent criticisms, colleges of further education are involved in a wide range of marketing and research activities. But three vital ingredients are missing, according to an unpublished study from the Further Education Unit.

The study, conducted on behalf of the FEU by HR and H Marketing Research International Ltd, says these three principal elements are an overall marketing strategy or policy; coordination of efforts and activities; and systematic application of formal procedures.

"These could best be achieved by means of reallocating resources. We believe this to be vital if the Government's stated aim of a 'market oriented approach' is to be achieved. FE colleges will need to become increasingly marketing and training oriented, as well as business-minded," the report says.

The study, which was intended to establish whether there was a role for a specific marketing function in further education, took place in five colleges thought to represent a cross-section of British urban life. In addition, local industry and employers were interviewed.

The five colleges were Cambridge College of Further Education; Rumney College of Technology, Cardiff; Hackney College, London; Loughborough Technical College, and Basford College of Further Education in Nottingham.

On the whole, colleges regarded the idea of a specific marketing function favourably. They believed this would mean less duplication of effort.

Employers, on the other hand, although they said they could gain substantially from making use of FE courses, felt strongly that these could be made more relevant to their needs by college staff visiting the workplaces more often.

The study has come up with a long list of recommendations. Among these is that a full time marketing professional should be appointed or alternatively a college marketing council. It also wanted to see the allocation of a marketing budget which adequately reflected marketing requirements and obligations.

In September
The Times Higher Education Supplement
published a 4-page analysis of the joint statement from the University Grants Committee and the National Advisory Body regarding the basis for considering the present and future role of higher education in our society.

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New chairman named as SERC faces change

The Department of Education and Science has confirmed that Professor Bill Mitchell will be the next chairman of the Science and Engineering Research Council. Professor Mitchell, a solid state physicist, is head of the Clarendon Laboratory at Oxford University, and will take up the new post for five years from October 1.

His predecessor, Sir John Kingman, decided to leave the SERC a year early to take up the vice chancellorship of Bristol University. This means the new appointment will coincide with changes at the top of three of the council's four boards – the main scientific decision-making committees which report to council. New chairmen of the science, nuclear physics and engineering boards are among seven new members of council announced this week.

Professor Brian Fender succeeds Professor John Cadogan of BP as chairman of the science board. Professor Fender was formerly director of the Institut Laue-Langevin in Grenoble and this year became vice chancellor of Keele University.

Professor Donald Perkins is the new chairman of the nuclear physics board. Professor Perkins holds a chair in elementary particle physics at Oxford University, and succeeds Professor Tom Kibble of Imperial College, London, who stood in briefly following the resignation earlier this year of Professor Derek Colley.

Mr David Shore, technical director of APV Holdings Ltd, succeeds Mr Diarmuid Downs as chairman of the engineering board. The three will be joined by four other new council members: Dr Charles Reece, director of research and technology at ICI, and a member of the Advisory Council on Applied Research and Development; Professor Malcolm Jeeves, a neuropsychologist and vice principal of the University of St Andrews; Professor Robert Wilson, an astronomer and director of observatories for the University of London; and Professor David Davies, an electrical engineer at University College London and chairman of the SERC and Department of Trade and Industry-funded Joint Opto-Electronics Research Scheme.

The additional new appointments replace Mr Philip Hughes, and Professors Mark Richmond, William Wilcock, and Alastair MacFarlane, whose memberships end this month.

Joint bid to replace cut in UGC grants

by Felicity Jones

A consortium of nine universities is ready to launch a summer academy scheme in a bid to generate income to compensate for the cuts in University Grants Committee grant.

The summer academy is the brainchild of Kent University which is to put up the risk capital and the university's finance committee has agreed to underwrite any losses incurred by the other universities.

A central administrative office based at Kent will coordinate the week-long study programmes which have been devised by a representative committee of all the participant institutions. Each of the universities will provide four courses which will be repeated once during next summer and will draw upon the existing expertise of the extra-mural departments.

Mr Nick Riding, secretary to Kent's school of continuing education said there was a gap in the provision of this kind of academic course, as opposed to recreation or leisure weeks, similar to successful holidays run in the United States for retired Americans held on university campuses.

"We wanted to achieve a good geographic spread at first and then expand the scheme if it is a success. We have had inquiries from other universities who want to come in," he said.

The universities involved are Birmingham, Durham, East Anglia (with Cambridge), Edinburgh, Exeter, Liverpool, Sheffield, Swansea and Kent. It is envisaged that some students may want to move from one university to another and the programme has been devised with this continuity in mind.

Mrs Ann Lewis, administrative officer of Durham University's department of adult and continuing education said they faced a deficit of £30,000 next year and a further 14.9 per cent cut in grant the year after.

"The summer academy represents the entrepreneurial activity to try to make up that deficit. The universities have always been involved in summer schools but these have been declining partly due to the development of activity holidays.

"We believe the summer study school is due for a revival and saw greater benefit in pooling resources with other universities through the consortium," she said. Durham University's four courses will be on Hadrian's Wall, frontier Anglo-Scottish history, the northern monasteries and Northumbria's Victorian legacy.

Jacqueline Scully overcame deafness to take a first-class degree in biochemistry at Oxford University. SHe lost her hearing at the age of eight after contracting meningitis and had to lip-read lectures during her time at Hertford College. She is pictured at the John Radcliffe Hospital, in Oxford, where she is spending the summer doing research before embarking on a PhD at Cambridge University.

UNION VIEW

Those hazy, crazy days of summer

Schooldays are supposed to be the best days of your life, but waiting for A level results can be miserable. Although NUS is still (mistakenly) seen as a higher education body, over 200,000 of our members will have been sitting their A levels this summer, and as the long wait drags on into the middle of August, I feel for them.

As if slogging away for two years and then spending May and June huddled in examination rooms were not enough! At this time of year the system demands the hardest task of all – sit back, wait and worry. From the inevitable deflation after the last exam paper, through the search for a summer job (or days of vegetation in front of the box watching Wimbledon), until the computer slip arrives to the sound of joy, resignation or downright despair – all this will be necessary so long as exam results are regarded as the ultimate measure of ability and attainment, and the basic requirement for continuing higher education.

It is because of this system of dependence on one system of assessment that the NUS views with concern recent studies illustrating injustices of the A level grading system. These have shown that the difference between a B and D can be as little as three marks, which is well within any examiner's margin of error. Yet this division is crucial, because it is a B or a C which may secure a place at a candidate's first choice institution.

Whether the latest proposals for a review of the grading system will iron out such inequities remains to be seen, but the initial effect will almost certainly be to ensure that more students will get A and C grades than will obtain Bs. Although this will undoubtably mean higher conditional offers from admissions' tutors, constrained by fears of over-subscription, it may also lead to applicants being assessed on interview performance rather than purely grades.

The concern over grades is highlighted by the loss of places in universities which have chosen to maintain their unit of resource. The effect can be seen in the increase of nearly 40 per cent in applications to polytechnics and colleges of higher education, many from candidates who fear their A level results will not make the grade for university. This is despite the fact that only a few years ago they would have been prime candidates for a place.

As youth employment leaves more and more young people turning to the chance of further and higher education for some hope of a future, competition for places is becoming increasingly stiff. Some of those who would have made it into university now look to polytechnics, and my fear is for those who may be squeezed out of the system altogether. It is a sad irony that as continuing education is held up to today's school leavers as a source of light at the end of the tunnel, for some the light will be snuffed out after the long struggle through.

For these, it may be another year of A levels, with another nerve-racking wait in six months' time as they compete with a fresh batch of hopefuls. One thing is sure, whatever they say about schooldays being the best days of your life, I know very few undergraduates – or academics for that matter – who would want to go through what many young people are currently going through again.

Liz Sewell

The author is an executive member of the National Union of Students.

Backing for compulsory updating

by Jon Turney
Science Correspondent

The Department of Education and Science has backed the Engineering Council's suggestion that professional updating be made mandatory for all professional engineers.

Sir Keith Joseph, Secretary of State for Education and Science, said last week it was important for professions close to wealth creation, such as engineering, to move quickly towards regular updating.

The DES response to an Engineering Council discussion paper says there is a strong case for making professional recognition conditional on completion of continuing education and training. And the department says newly qualified engineers should be required to do such courses to maintain their membership of professional engineering institutions.

The department calls on the Engineering Council to take the lead in promoting updating, and says that the goal should be to extend mandatory updating to all members of the profession. It says engineers with new qualifications can quickly find their knowledge and skills seriously out of date, and this can significantly impede industrial performance.

However, the DES makes no commitment to increasing Government spending in the area, referring only to a need for a change in attitudes by employers, professional institutions and training providers, and for an increase in industrial investment.

The DES paper says employees and professional groups must accept personal and corporate responsibility for updating professional knowledge. The department will continue to encourage universities, polytechnics and colleges to expand their continuing education and training work.

The Engineering Council is running a study of firms' attitudes to continuing education and training, expected to be completed later this year.

IT boost in reply to skills report

by Patricia Santinelli

In a rapid response to the Butcher report on skills shortages, the Business Technician Education Council is to pilot two new information technology courses in around 14 polytechnics and colleges from this autumn.

The two new courses are aimed specifically at technicians. One will offer a higher national diploma in information technology, covering analysis, design and implementation of IT systems. The second will offer a HND in business information technology designed to educate practitioners who can promote, facilitate and integrate IT based systems within commerce, industry and administration.

Both courses come in the wake of findings outlined in the second report of the IT skills shortages committee under the chairmanship of Mr John Butcher, junior minister for trade and industry, published earlier this year.

This focused on the shortage of technicians with IT skills and concluded that there was a need both for a greater number of people with such skills and for a general level of IT skills in the technician workforce.

As a result BTEC entered into discussions with representatives of the Department of Trade and Industry, the Engineering Council, the National Computer Centre, International Computers Ltd, the Manpower Services Commission and colleges and polytechnics.

The courses will be run or are expected to be run at the following institutions – Brighton, Hatfield, Huddersfield, Lancashire, Leeds, Leicester, Manchester, Newcastle, Teesside and Thames polytechnics, as well as the colleges of Buckinghamshire, Dorset, Farnborough and Slough.

Draft guidelines for the IT courses will be issued this autumn though definitive details will not be produced and distributed until a full evaluation of the pilot schemes has taken place.

● Prestel Education has decided to reduce its time charge to users by a third. The new tariff will be 4p a minute instead of the standard rate of 6p and will apply regardless of usage.

Research will aim to ease trauma of divorce

Breaking up is hard to do – but it might become substantially less rancorous, not to mention cheaper, if a team of academics from Newcastle University succeed in establishing a nationwide conciliation service for couples involved in marriage disputes.

The group, led by Professor Anthony Ogus, professor of law, has been awarded nearly £400,000 by the Lord Chancellor's department to set up a conciliation project unit, which will look at ways of lessening the traumas of divorce and family breakdown.

The eight-person team will investigate the cost effectiveness of various informal conciliation schemes which exist all over the country at present, weighing up the cost of their operation and the consumer satisfaction derived from them.

"There has been a trend of using more informal procedures for trying to solve divorce problems and make settlements, and the Lord Chancellor's department has been considering for some time whether to devise a national conciliation service," said Professor Ogus.

"Rather than have a judge or registrar making decisions about things like custody of children and access, it is more effective in many cases to get both parties round the table and use a conciliator who will look for a voluntary agreement."

He said such schemes already took place both in and out of court, with the help of probation officers, marriage guidance counsellors and other specialist staff.

Mrs Janet Walker, a lecturer in social policy, said the group would study individual families over an 18-month period to find out their needs during periods of acute stress, and would also concentrate on the effects of separation and divorce on children's emotional development.

On the legal side, the unit will examine the costs of court time, solicitors' services and the time spent by various parties in the legal and conciliation process. Professor Ogus said the establishment of the unit reflected the need for an inter-disciplinary approach to the problem.

Assuming there is no further increase in the rate of divorce or the number of children per couple, the unit estimates that some 1.6 million children will see their parents get divorced during the next 10 years.

Phase out hotel course, says HMI

A disappointing pass rate coupled with high wastage has prompted Birmingham College of Food and Domestic Arts to phase out a part-time professional qualification for hotel and catering personnel in favour of a three-year Higher National Certificate course.

However, this could pose a problem for mature students for whom the Hotel, Catering and Institutional Management Association qualification provided access to membership of a professional body.

The findings are contained in a recent report by Her Majesty's Inspectors on the college's part-time higher education courses for employees in the hotel and catering industry.

HM inspectors found that the initial intake to the HCIMA course was small, with wastage as high as 50 per cent. One explanation advanced is the high mobility of personnel within the industry. Eighty per cent of current students were already in management or supervisory posts, and promotion or employer demands meant many would be unable to continue their studies through day-release courses, the report states.

While selection criteria for both the HCIMA and Business and Technician Education Council HNC programme are similar, the college should consider introducing formal compensating studies to benefit students on the HNC course, HM inspectors advise.

On overall evaluation, the inspectors found a high standard of teaching and learning experience, good links between the college and the hotel and catering industry and satisfactory tuition resources.

All students found the courses relevant to their work, but a slight bias towards hotels was noted by HCIMA students drawn from the National Health Service.

Union asks for medical accounts examination

London Hospital Medical College is considering a union's plea for accountants to investigate its finances and find ways of avoiding redundancies.

This was suggested by the Association of University Teachers during talks with college authorities over the activities of the academic board subcommittee which has been given the task of defining an "affordable staff structure."

Union leaders fear that the activities of the subcommittee, known as the Academic Development and Planning Team could lead to redundancies.

The talks were cordial, but inconclusive. AUT London regional official Mr Malcolm Keight said afterwards: "We hope to receive some assurances about the procedure the college is adopting, in particular that no decisions will be taken without proper consultation with the unions and the fullest debate by the academic board.

"However the college was unable to give any indication that redundancies would be avoided."

The team's report is expected to be discussed by the academic board early in the autumn.

Earlier this year the college told the AUT that a medium-term financial plan removed the need for redundancies, which were first threatened last October when the financial position seemed grim. But the union fears that the team's recommendation which is being drawn up in consultation with external assessors could also lead to worse staff/student ratios.

Room at the top after 31 years

Mr Mikhail Gorbachev's shake-up of the Soviet leadership has resulted in a change at the top of the higher education ministry for the first time in 31 years.

The director of Moscow's Mendeleyev Institute of Chemical Technology, Mr Gennady Yagodin, has been named as the new minister of higher education and specialized secondary education. At 58, he is 20 years younger than his predecessor, Mr Vyacheslav Yelyutin (above), who had held the post since 1954.

Higher education has been accorded high priority in Mr Gorbachev's modernization programme. The appointment of a new minister from outside the state bureaucracy is a further indication of the desire for a new direction in higher education policy, stressing the importance of science and technology.

Egyptian increase

The Egyptian prime minister, Mr Kamal Kassan, has announced that his government is to increase its funding for scientific research and called for greater use of research to solve economic and social problems.

Speaking to academics and scientists at the Egyptian Academy of Scientific Research and Technology in Cairo, Mr Kassan said that increased scientific research was crucial to effective economic and social development. Egypt is to increase funding to 1.2 per cent of the total national income and this figure will rise further in 1987 at the beginning of Egypt's second five year plan.

Rules relaxed

The Indonesian government has relaxed restrictions on students wishing to study abroad as its universities and colleges have failed to come anywhere near meeting the demand for higher education in the country.

Indonesia has 33 state universities and 11 teacher training colleges, but they could only provide 90,000 places for the 500,000 students who applied for higher education courses this year. As a result there was a rush for places in the country's open university and private higher education institutions, besides overseas courses. In the past government restrictions meant that students wishing to study overseas had to apply to the education and culture ministry, and the number of applications granted was limited, but now students need only inform the ministry of their intentions.

Student unions hit

The Bangladesh government has ordered all student unions and halls of residence in the country's six universities to be dissolved under martial law regulations. Chief martial law administrator, H. M. Ershad, said all student union officials would cease to hold office immediately.

The government made the decision because it believes the recent turmoil in the country's universities have been caused by political activists within the student unions. All six universities have been closed and political activities banned since March 1, when martial law was reimposed.

Study shows rising cost of learning

from William Norris

WASHINGTON

There is no such thing as a free lunch, and certainly no such thing as a free college education in America – unless you happen to be an outstanding athlete. But until this week there was a widespread belief that young people from the poorest families could, with various forms of aid, complete their studies almost entirely at public expense.

It is not so. A study released by the American Council on Education shows that when all the figures are added up, low income families must expect to pay at least one half the costs of college.

Those costs are high, and getting higher. An undergraduate at a public college must now expect to pay around $20,000 for a four-year degree course – at a private institution the figure will exceed $30,000.

The report, which defines a low-income family as one with $15,000 a year or less, says that after allowing for grants, such families will pay about $2,500 annually out of their own pockets for each student at a public university, and $4,000 plus at an independent institution.

The main forms of financial assistance for students are the so-called Pell grants (named after Senator Claiborne Pell), which currently provide up to $1,900 per year or half the cost of education, whichever is less – and guaranteed student loans at subsidized rates of interest. Under the latter scheme, undergraduate students can borrow up to $2,500 a year, to a maximum of $12,500. Graduate and professional students may borrow up to $5,000 a year to a total of $25,000.

All forms of aid are means-tested, and the probability of obtaining financial help falls off sharply once family income exceeds $25,000. The ACE report found that only one in three such students receives a Pell grant, compared to two out of three where family income was less than $25,000. More seriously, 17 per cent of low-income students at public universities were unable to get Pell grants at all, and 13 per cent of those at private colleges.

The report, which was compiled with the aid of a Ford Foundation grant from the official records of 15,000 students, concludes that poor students have come to rely increasingly on borrowed money. On average, depending on the type of institution they attend, they will borrow between $7,500 and $9,000 to complete their degree course. This means that for 10 years after leaving university they will have to pay back between $112 and $124 each month – a considerable extra burden for young people who probably want to get married, buy a house and start a family.

The consequences are becoming far-reaching: there is a sharp fall in the numbers of black and other minority freshmen at the universities, many of them unable or unwilling to take on the extra burden of debt. And among students who do take the plunge, career choices are being increasingly dictated by their ability to generate enough money for the repayments.

This worries educators like Kenneth H. Ashworth, commissioner of the Texas College and University System Governing Board, who told a recent congressional hearing that students were now less likely to take up jobs which serve the public, such as teaching, because they feared that their salaries would be too low to service the loans.

In spite of administration efforts to cut back on student aid, Pell grants rose to be increased next year to a maximum of $2,100 or 60 per cent of education costs. In 1984/85 they were given to 2.8 million low-income students at a cost to the federal government of $3.3 billion. This increase, however, will be insufficient to meet the rising charges at universities, which are going up by double the rate of inflation and sometimes more.

Some educators want to see the guaranteed loan programme increased to fill the gap, but this is anathema to education Secretary William Bennett. Dr Bennett has gone on record with his belief that many colleges are overpriced, and that an increase in federal aid will simply encourage them to raise their fees even further.

Butchand the Crazylegs gang

The cast of characters sounds like a roll call for *Guys and Dolls*, and their cause – the raising of a million dollars – should gladden the heart of any university. But strange to tell, the University of Wisconsin is not enthusiastic about the forthcoming "Great Badger Sports Raffle" to be staged for its benefit. And it is certainly not amused.

The scheme is the brainchild of Palmer "Butch" Strickler, a retired sausage maker, who founded Butch's Badger Bologna Benefit, Inc, to boost Wisconsin's athletic budget. Mr Strickler proposed a raffle, with tickets selling at $5 each, to be run under the supervision of the state Bingo Control Board. Prizes included a $125,000 furnished house, a $12,500 recreational vehicle, and a $7,500 fishing boat.

The university's sports department, headed by Elroy "Crazylegs" Hirsch, was not averse to the scheme. But the reaction from the academic side of the campus was a lofty sniff.

Irving Shain, chancellor of the Madison campus, instructed his athletics officials not to accept any proceeds from the raffle. The organizers said they would go ahead anyway and even threatened to sue the university on the grounds that state law forbade it to turn down donations. The affair escalated when reporters began to investigate the records of Wisconsin's athletics department. "Crazylegs" Hirsch, it transpired, had already done pretty well out of Butch's Badger Bologna Benefit, Inc. He had not only been given a 27ft sports cruiser, but had been provided with $12,140 to buy 57 sides and hindquarters of beef to distribute among himself and associates for "public relations purposes".

In all, it was claimed, some $200,000 had been spent last year alone on perks and gifts for athletic department staff and associates. So what? said "Crazylegs". Wisconsin paid his staff less than similar institutions, and such small gifts were merely compensation.

No one has charged that the expenditures were illegal, or that they violated the rules of the National Collegiate Athletic Association, which forbid only cash payments to coaches. Mr Shain claimed that the image of the university and its athletic programmes was at stake, and barred the acceptance of any further funds from Butchers Bologna Benefit, Inc.

Mr Shain had not been pleased to learn through the press that some financial records which auditors had been told did not exist had been discovered in cardboard boxes in the athletics department. Nor that "Crazylegs" Hirsch had been forced to admit that he had "inadvertently" double-billed the University for expenses no fewer than 11 times. He laid down strict conditions for the acceptance of donations in the future.

Other supporters' clubs in Wisconsin, known as "Boosters", have been confused by the university's high moral stance. Milo Flaten, former president of one such group, the Dugout Club, wondered whether he would be prevented from running his annual raffle for the baseball team. Mr Flaten said mildly that the university's stance was "a little on the hypocritical side". They did not, he said, object when industry "big shots" gave large sums to the athletic programmes, "but when money comes in from blue-collar guys hanging around taverns, they seem to feel there is something wrong with it".

Job prospects improve for US graduates

Prospects are improving for job-hunting college students in the United States. A report by the College Placement Council shows that employment offers have increased by 4.9 per cent during the past year, with starting pay also up by between 3 and 5 per cent.

In a survey of 187 placement offices at 163 universities, the council found that there were 44,479 jobs offered between September 1 1984 and June 7 1985, compared with 42,393 offers in the same period a year before.

Engineering students continued to be the most sought-after, and the most highly paid. Graduates in the petroleum engineering received the highest starting salary – an average of $30,996 with chemical engineers in second place with $28,428, and those with degrees in electrical engineering running third with $27,396.

But there was also good news for liberal arts graduates, described by Judith Kayser, manager of statistical services for the council, as "a real bargain". They, too, were hired in greater numbers. "There seems to be a re-evaluation of the liberal arts", Ms Kayser said. "These students have analytical and communications skills, and are able to relate to the big picture. They can relate one decision to another. Employers are recognizing this."

Female students did well. Their job offers increased by 10 per cent, compared to 3 per cent for the men. But there was an unhappy surprise for graduates in computer sciences, where starting salaries rose by a meagre 1.8 per cent to an average of $24,984. At that, however, they were still well ahead of those with degrees in general business, accounting, marketing, or social science.

Although the situation has improved, the council is disappointed that the recovery has not been greater, both in terms of the numbers of jobs and the salaries offered. It is felt to be a carry-over from the recession of the early 1980s. "So many employers were adversely affected then," Ms Kayser said, "and the scars have not healed. Despite the economic expansion in the past two and a half years, we have not been able to shake the cautious attitude."

This may explain the one black spot in the report: an actual drop in the number of jobs offered to those with a master's degree in business administration.

Körber prize announced

from Barbara von Ow

MUNICH

A West German and a Bulgarian research team will be the first to receive the new "promotion prize for European science" established by a German businessman last year.

The prize, worth DM2 million annually, is the latest brainchild of industrialist and patron Kurt A. Körber. His Körber foundation set up in 1959 to finance a discussion forum for the problem of industrialized nations, spent some DM6 to 7 million annually to promote a variety of schemes.

The European science prize was announced by Körber on his 75th birthday last September as a complement to the Nobel prize. It will be formally awarded in Hamburg on September 7 on Körber's 76th birthday, according to a statement by the prize commission.

Some DM1.2 million of the prize money will go to a medical research team in Munich for work on therapeutic methods with sound pressure shock waves. A research team at the Institute for Metallurgy of the Bulgarian Academy of Sciences in Sofia will receive DM800,000.

Scientists welcome Eureka move

from Donald Fields

HELSINKI

Scientific researchers in Norway, Sweden and Finland are both pleased and relieved that their respective countries have become involved in the French-inspired high technology scheme known as Eureka.

Sweden is devoting about 2.5 per cent of its annual gross domestic product to research and development, while Norway and Finland are rapidly raising their shares from below 1.5 per cent. However, political considerations also weigh heavily in how these peripheral states, each with plenty to give and take technologically, approach European cooperation of any plane.

Like Switzerland, Austria and Portugal, which are also jumping on the Eureka bandwaggon, all three are members of the European Free Trade Association – Finland as an associate. Norwegians voted in a referendum against the Common Market while neutrality precludes the Swedes and Finns from joining the EEC. Sweden has nevertheless built up close cooperation with Brussels in ways that Finland, constantly looking over its shoulder at its Soviet neighbour, does not permit itself.

Indeed the Finns almost missed the Eureka bus entirely, apparently through a mixture of inbuilt caution and official dithering. Only four days before the initial Eureka conference in Paris did they get themselves invited by the French – who had asked other EFTA countries along well beforehand.

That Finland does not belong to the Council of Europe may have been one critical factor. Another could be Western fears that technology developed in connection with Eureka could seep through Finland.

The Conservative government in Norway, a founder-member of Nato, has distanced itself from Washington's Strategic Defense Initiative though a left-wing motion deploring all forms of "Star Wars" research, was not defeated in the Storting (Parliament). Sweden had no qualms in deciding that Eureka was compatible with neutrality.

Despite the political constraints, the Nordic countries obviously see European cooperation in Eureka as their best chance of countering competition from the pacemakers in advanced technology, Japan and the USA.

While they have much specialist expertise to offer, their resources are inadequate except when pooled with those of larger states. Nordic scientists are in the forefront in several of the fields covered by Eureka – notably biotechnology, microelectronics and data technology.

Assuming the project gets off the ground, a key question for higher education will be how much Eureka-related research will take place in universities.

Science budget halved

from Christine Tausig

OTTAWA

Substantial budget cuts at the Science Council of Canada have left staff demoralized and apprehensive. The council was told this week that its budget is to be slashed almost in half from $4.5 million to $2.5 million and the staff reduced from 68 to 30. The cuts are to be carried out by the next fiscal year.

The council was established in 1966 as the science policy "think tank". Although it advises the federal government on science and technology issues, it operates at arm's length from the government.

Word of possible cutbacks came in May, when the recommendation of a cost-cutting task force was tabled along with the progressive conservative government's first budget. The task force proposed not only reducing the science council's budget, but also allowing the government more control of its activities.

When businessman and council board member Adam Zimmerman heard of the plan he immediately led fellow board members in an impromptu protest march to the offices of prime minister Brian Mulroney and Tom Siddon, minister of state for science and technology. Such a budget decrease, stated Mr Zimmerman later, is an "execution, not a cut".

This week, however, when the proposed cutbacks were confirmed by Mr Siddon, the federal government vowed not to interfere with the council's independence. In addition, despite receiving less funds, the council will be consulted more often by the government on issues of national importance, the minister pledged. He specifically asked for the council's advice on subjects such as scope of Canada's space programme and methods of ensuring adequate support of university research and training of future researchers.

Although pleased that the minister has announced plans to consult the science council more often, officials are left wondering how they will carry out such requests with only half their current resources.

Australians enforce sanctions

from Geoff Maslen

MELBOURNE

Australian higher education institutions have begun to apply bans on any dealings with South Africa, following increased pressure on the federal government for tougher sanctions against the regime.

Australia supported France's United Nations security council resolution proposing a range of voluntary measures against South Africa, including a ban on further investment. A wide range of unions in Australia have also intimated that they will be taking action against companies known to have links with South Africa.

The council of the Melbourne College of Advanced Education resolved last week to boycott products and equipment made in South Africa and to progressively eliminate any financial dealings with companies associated with that country.

The college operates on a Aus $19 million a year budget and at any one time has Aus $2 million invested in the short-term money market. Under the council ban, staff will be expected to avoid purchasing material produced in South Africa or made by firms with links to that country.

The college's business dealings will be restructured to discriminate against companies with ties to South Africa, although the college admits this will be almost impossible to enforce fully. The chairman of council, Mrs Joan Dwyer, said that the resolution calling for the bans was intended to show the college's abhorrence for apartheid and the manifest inequalities in South African education and society.

Elsewhere, the Council of the South Australian College of Advanced Education has also called for a South African boycott and students at Adelaide University have urged that institution to apply bans.

The Federation of Australian University Staff Associations and other groups representing academics have already adopted policies limiting dealings with South African firms or businesses with links to South Africa.

The general secretary of the FAUSA, Mr Les Wallis, said the federation two years ago had cut ties with a travel company owned by Elders because of that company's substantial pineapple plantations in South Africa. It has also removed funds from Barclay's Bank because of its South African connections.

Several other Australian higher education institutions are also believed to be considering imposing bans on South African contacts.

Hand for Bangladesh

from Charlotte Beyers

PALO ALTO

Whether or not 100 women in Bangladesh know it as they sew handicrafts and make fishing nets, they have friends across the world at Stanford University.

Students here have raised $5,800 to help the women who want to learn to help themselves. "We're trying to avoid having them depend on outside sources continuously," says Mr Nazir Ahmad, a student at the Stanford Food Research Institute, and founder of SIDO, the Stanford International Development Organization. It now has chapters at more than 22 universities including Yale, Harvard, Princeton and Brown.

Born in Bangladesh, Mr Ahmad wants to educate American students and staff to the enormous problems facing developing countries.

Since its beginning in 1984, SIDO has sponsored three large-scale symposia. Harvard and Redcliffe hosted a symposium on Realistic Approaches to World Hunger. And both Stanford and Johns Hopkins have had recent conferences on international food crises and homelessness.

Temps worry professors

The increasing numbers of temporary and part-time faculty hired to instruct freshman and sophomore courses at American universities is causing concern, especially among professors of English.

According to Maxine Hairston, who heads the conference on college composition and communication of the National Council of Teachers of English, the trend is not only reducing the supply of new talent entering college teaching, but also affecting students' interest in studying the humanities.

Ms Hairston, who is a professor of English at the University of Texas, claims that well-qualified young teachers are being hired on short-term contracts at salaries which compel them to do part-time work elsewhere, and that many are leaving to take better paid jobs in industry. In 1980, the last year for which figures are available from the National Institute of Education, 41 per cent of college faculty were employed on a part-time basis.

Students, she says, "quickly get the message that the department cares little about the large and diverse group of students in its lower division courses. Even students who have planned to major in English will be discouraged, and few will even consider a career teaching English in high school or college. As the influx of temporary and part-time faculty members has depressed faculty salaries, reduced faculty power, and lowered both the status and value of a PhD in English and other areas in the humanities, the news has trickled down to high school students".

The problem arises from budget formulas which fund the labour-intensive freshman courses at lower levels than advanced courses. Ms Hairston wants this policy reversed, making it possible to staff them with regular faculty.

Academics negotiate perks

from E. P. Brandon

KINGSTON

The academic staff union at the Mona campus of the University of the West Indies, in Jamaica, has negotiated a three-year pay freeze despite being offered an increase of some 10 per cent per year. Yet its members are not complaining.

Negotiations for the 1984/87 triennium began in earnest earlier this year with an offer that envisaged an increase of approximately 10 per cent a year. But for the first time, as a result of the recent restructuring with its increased local control of financial matters, the Jamaican campus was offered a substantial increase in non-taxable allowances. Since Jamaica's tax rates have hardly changed since 1977 the top rate of 57.5 per cent is now being charged on incomes of less than £2,000 per annum (14,000 Jamaican dollars and above).

The union was able to shift the money allocated for the triennium into the maximum tax-free package acceptable to the Jamaican government, a 60/40 mix of taxable and non-taxable income. In so doing, Mona academics will now all enjoy a personal entertainment allowance averaging 3,000 Jamaican dollars a year as well as about twice that for travelling and a choice of housing at 30 Jamaican dollars a month or a re-rental scheme at 30 per cent of salary.

These perks do little to improve the relative standing of the Mona campus either within the university or in the international marketplace (a professor's total package still only comes to less than £10,000, and less than a lecturer at the other campuses) but they represent a fairly substantial improvement.

The Jamaican government has promised on a number of occasions to reform the tax system.

Discrimination 'causing poverty trap for Malay Indians'

by Geoffrey Parkins

Malaysia's prime minister Datuk Seri Dr Mahathir Mohamad has been warned by the Malaysian-Indian Congress (MIC) that inadequate educational opportunities and discrimination in education and employment are a major factor contributing to the poverty trap in which 75 per cent of Malaysian-Indians find themselves.

Addressing the party's general assembly in Malacca, which was opened by the prime minister, party president Datuk Samy Vellu was surprisingly outspoken on the plight of Malaysia's Indian community. He said that from the earliest to the highest stages of the education system Indians experienced problems. And unequal opportunities generally had meant that the socio-economic status of the vast majority of Malaysian-Indians had stagnated and were still struggling to break out of poverty.

According to Samy Vellu, who is also minister of works, the congress had used up most of its resources in attempting to secure higher education for young Indians. Coming dangerously close to openly criticizing the government's policy of positive discrimination for Malays in education and employment Samy Vellu said that more scholarships should be made available to Indians. The quota system and government policy generally, he said, should reflect the interests of the entire nation and not just those of the Malays.

Malays make up around 50 per cent of the population, Chinese and Indians 35 and 15 per cent respectively, but at present many reports estimate that somewhere between 80–90 per cent of university scholarships are reserved for Malays.

The problem in education begins long before higher education, said Samy Vellu. Almost 50 per cent of Indian primary school children receive instruction in Tamil language only. Facilities in the schools are poor and have seen no improvement in many years, especially in the rubber estates. The majority of Indian children drop out from school early, with only 6 per cent attending at the secondary level. And only just over 2 per cent reach the final school leaving certificate level.

After receiving much criticism for not going through the proper channels when presenting his grievances, Mr Vellu said that if he is now asked to step down from his post in the government, he would do so, "but nobody can stop me from talking and close my mouth".

On education and employment, Mr Vellu said his criticisms were not levelled directly at the government but at the middle level officials and administrators who were simply not implementing the government's policies "diligently and sincerely"; policies which should meet the needs of all groups in society.

UNION VIEW

Unhappy lot of university women

The association has for many years wished to undertake research in a number of areas which are becoming increasingly important for society in general and the universities in particular. These include the status of women in the universities, representation of ethnic minorities and other underprivileged groups such as the disabled, and the working conditions of non-tenured academic staff including tutors, instructors and demonstrators.

In 1983 the association's council approved funding for a research project to be set up under the supervision of Margaret Wilson of Auckland University to: show the position of women academics in New Zealand universities; examine some of the reasons for the present position of women; compare the New Zealand situation with similar recent studies in Australia and elsewhere; look at the feasibility of affirmative action programmes.

The final report is due for release in September/October. Preliminary figures confirm generally held views. For example, in recent years the proportion of full-time female university students has steadily increased. In 1963 female students were 24.6 per cent of the internal student population, by 1975 this figure had increased to 36.1 per cent and by 1983 to 43.9 per cent. Female students in 1983 represented 40.5 per cent of full-time and 58.8 per cent of part-time (including extramural) students.

It comes as no surprise, however, that the increasing number of women students has not led to any significant increase in the representation of women academic staff. In 1963 women academics represented 9.6 per cent of the academic staff. By 1983 this figure had only increased to 13.5 per cent with the greatest representation being in lowly-ranked positions.

The proportion of women to men in tenured or tenurable posts in 1983 was only 9.8 per cent. Of the academic women in New Zealand's universities 34.4 per cent are in non-tenured junior posts.

The survey confirms the association's suspicions that women get fewer jobs at our universities and when they do they are appointed at lower levels than men and face serious difficulties in gaining promotion. Helen Clark, MP, and an ex-academic, in a lecture on "The University and Women" delivered at Auckland University in June 1983 made the following remark:

"The very structure of the academic career – as of other careers – plays a crucial role in blocking the advancement of women in the universities."

Issues such as paid maternity leave, the provision of adequate child care facilities on campus, job-sharing, permanent part-time employment and affirmative action programmes are now seen as pressing if the balance is to be rectified.

Margaret Wilson's final report is awaited with anticipation by a number of organizations including the Human Rights Commission. Appropriately enough, it will be released almost at the end of the United Nations Decade for Women – the association hopes that the universities will play their role in improving the lot of women in the next decade.

Rob Crozier

The author is executive secretary of the Association of University Teachers (New Zealand).

...freedom to tune in to a world of language

The funeral of Soviet Premier Konstantin Chernenko prompted something more than the usual stir among staff and students at Reading University earlier this year. Like so many of the nation's viewers, students from many disciplines crowded the university's language laboratories to watch live television pictures of the grim event – with the crucial difference that these were being beamed directly from Moscow.

The freedom of Reading – and all other universities for that matter – to be able to receive satellite transmissions from all over the world has come about thanks to the recent Government deregulation of the airwaves.

Previously, all but a few telecommunications organizations such as British Telecom and Mercury and some research institutions, such as universities, were able to obtain special licences to put up and use satellite receiving equipment, for testing and development purposes.

Now, in the potential free-for-all of the coming years, predictions foresee up to 60 channels of television being delivered by satellite in Europe, and a booming market for dish aerials, even among individual users anxious to broaden their evening viewing options.

Reading was one of the first universities off the mark to take advantage of the new-found freedom. Under the guidance of their language laboratory manager Mr Tony Warden, they installed a system consisting of two separate dishes.

Mr Tony Warden, language laboratory manager, and the satellite dish at Reading University

One receives pictures from the Soviet satellite known as Gorizont, which transmits the first channel of Moscow television and radio, while the other is aligned to receive transmission from the European Communications System (ECS), which handles signals from France, Switzerland, Italy and Holland.

The two receivers have been connected to an elaborate system of video recorders and screens in the language laboratories (in a different building), have helped to add an extra dimension to the teaching of foreign languages, one of Reading's strongest fields.

"They are used by students both formally, in lessons, and informally, when they just pop in and tune into whatever is on" said Mr Warden.

In the Russian department, lecturers have been putting together an archive of material ranging from feature films and literary programmes to recordings of important political events, such as official announcements and parades. The Transmissions are even useful for teaching first-year students, learning Russian from scratch.

As Mr Warden points out, the whole project is very much in its infancy and not without substantial difficulties. Problems of copyright and payment of subscription fees have not been solved, which leads to certain signals being scrambled. Decoders then have to be hired from the television company concerned, which adds an element of bureaucratic entanglement to the affair.

But the potential is enormous. In Europe alone, encouraged by the freedom of information provisions in the Treaty of Rome, the future seems to lie with consortia such as TV5 (La Television Francophone par Satellite), which transmits collections of French, Belgian and Swiss programmes.

Dr Chris Wagstaff, lecturer in Italian studies, sees the limitations as well as the advantages of the new development. "It is certainly a very different matter from listening to the radio – the reception is much clearer for a start, which is the last thing you would have imagined," he said.

"But there is still considerable debate as to how useful passive acquisition is in the learning of a second language. The advantages are obviously that everything is up to date, but we are still looking at no more than a very valuable...

Where the study of foreign television can make a more considerable impact, however, is in the relatively new field of media studies, in which Reading is equally well placed to make a contribution.

The university already runs a course in Italian cinema and has received a new blood pool in media studies, a subject which can also be studied in conjunction with linguistics, typography and graphic communication course. Mass culture is a course a familiar theme in the higher education world of the United States, but similar studies in European countries are rare.

"A study of the European media would appear to be totally different from anything being done anywhere else at present," says Dr Wagstaff. "The overwhelming problems of language and access have always made it difficult, but that could all change. Once again, copyright problems loom, but if a code was established for academic studies, satellite television could open up entirely new fields of research.

"One could imagine comparing work on, say, Italian and German soap operas, who watches them, why they are made and so on. Very often the burning issues of a country are reflected in these, and prove very interesting areas of study."

Peter Aspden

Bleeper philosophers

Britain should now join the US in fostering academic enterprise to deal with medical dilemmas says Jon Turney

American doctors worried about their role in birth, death, and some of the moments in between, can now turn to a pocket book of clinical ethics. Designed to fit handily into a white coat, the book is a sign that medical ethics has achieved respectability – in the US if not in Britain.

That respectability is also offering jobs to a growing number of professional philosophers. There are already what Dr Art Caplan of the US Hastings centre calls "bleeper philosophers" who answer emergency calls in some transatlantic hospitals. And there are many more philosophy teachers catering to the US demand for medical ethics teaching.

They are part of a growing academic enterprise founded on concern over the dilemma of high technology medicine. Who gets expensive new treatments, and how long for? Who decides on selection of potential heart transplant recipients when donors are in short supply? What does it mean for patients to give informed consent for treatment or experiment? Should handicapped babies always be saved? On and on as medicine strives more officiously to keep us all alive longer, and at ever greater cost.

A recent week-long meeting in Oxford gave a European audience their first opportunity to hear from leading American workers in the field at first hand. The Oxford University external studies department invited the US Hastings Centre – a pioneering bioethics think tank – to bring their annual summer school across the Atlantic for the first time. It would also give the Americans a chance to see how European thinking was developing in the same area.

In the event, the Americans dominated, in numbers if not always in quality, and British and European developments were generally defined by their differences from the US scene.

This was not surprising when the Hastings Centre was founded in New York State as long ago as 1969. The centre, more formally known as the Institute of Society, Ethics and the Life Sciences, began life when issues like transplant surgery, dialysis and genetic engineering were just beginning to surface – as its director Dr Daniel Callahan recalled.

It began when there was a growing unease over the practice of medicine, coinciding with the increasing success of scientific doctoring on its own terms. The clamour for a more humancentred medicine as high-tech therapy came to be seen as alienating or dehumanizing left many doctors feeling, in the words of the Hastings Centre's president Dr Willard Gaylin: "how can you treat us this way, after all we've done for you?".

This may suggest that the medical profession's support for medical ethics in the states is partly defensive, an impression reinforced when several

We are already in the age of rationing for patients on dialysis machines

Oxford speakers recalled that the US is the home of "defensive medicine" – treatment and tests prescribed with one eye on the patient and one on the lawyers. Certainly, the introduction of forms for informed consent for many procedures has more to do with legal protection for the doctor than a genuine attempt to make sure the sick patient understands what will happen next.

Other forces shaping the field, more familiar in Europe, are the power of new technology to throw up a need for new kinds of decisions – the demands of the media for comment on medical extravaganzas like the artificial heart. Dan Callahan felt the academics had to work hard to keep the field serious "in the face of the forces which want to turn it into soap opera and high drama".

So the Hastings centre tries to strike a balance between research and education, between consulting for government and media commentary, and between being responsive and forward looking. And while the current portfolio of research includes old media favourites like transplants, kidney dialysis, artificial organs and abortion and new ones like AIDS, there are also less visible projects on ageing, rehabilitation and care of the chronically ill.

Within the set of concerns, three themes vie for the spotlight in bioethics US-style. For some, bioethics is chiefly a meditation on high technology medicine. Yet others stress the centrality of the doctor-patient relationship in any map of the field. As Carol Levine of Hastings put it: "The day to day encounters between ordinary doctors and ordinary patients are at the heart of biomedical ethics".

Still others see allocation of resources as the overarching theme, so bioethics becomes a part of theories of welfare. This is generally confined to allocation in the West, and here all three themes interact. In particular, the resource questions tend to turn on use of particular technologies to save individual lives – death is generally cheap, and certainly cheaper than a heart transplant.

Dr Caplan argued strongly against a line of argument currently politically popular in the United States – that rationing of the more expensive goodies is becoming inevitable as costs go on climbing. He saw a new enthusiasm for "lifeboat ethics" in health planning – and a wish to delegate the philosophers and theologians to help choose who to throw out.

It was true that new technologies could present enormous costs. The bills to keep Barney Clark, one of the recipients of an experimental artificial heart, alive for three months came to $750,000. And some items becoming standard diagnostic equipment like nuclear magnetic resonance scanners cost $3 million apiece.

Caplan believed there was still enough fat in the system to pay for such things, if desired – and the move to local rationing by doctors themselves was the worst way to go. "The most unethical course would be to throw some people over the side when we're not in a lifeboat," he said.

The British response was that we were already in the age of rationing, and several speakers cited the tacit agreement in this country not to refer patients over 55 for long-term support on kidney machines. Curiously, this is also the age of cut-off for heart transplants in the US, although no one over there is denied kidney dialysis. Even so, Dr Caplan's argument sounded to some like an attempt to avoid the problems of selection, rather than a persuasive route to doing away with them.

The kidney dialysis example points up some of the main differences between Britain and the US in the way such issues are managed. When kidney machines were in short supply in the States, there was widespread critical publicity about the "God committees" set up in some hospitals to select patients. This was one of the main reasons the Government decided to underwrite the costs of dialysis treatment for all those in need.

In Britain, where rationing by queueing has become essential to the operation of the National Health Service, the shortfall in kidney machines is generally met by not referring some patients to hospital at all. They simply don't know what they are missing.

In spite of our national obsession with the Health Service, practices like this rarely make the news. And there is little evidence that it troubles many of Britain's 60,000-odd doctors. Only...or two practising British doctors...to the Oxford meeting. And Dr D...naan Gillon, editor of the Brit...published *Journal of Medical Ethics*...admitted that interesting doctors in...area in this country was a bit...stirring porridge.

As a result, around only ten...versity teachers in Britain spend...of their time teaching medical ethics...student doctors. Dr Gillon earns...bread and butter running the stude...health service at Imperial Colleg...London. And he looks to the US for...instruction and inspiration in how...teach medical ethics.

A study tour last year showed him there was "an enormous amount of...real, critical ethics being taught in the US". Many future doctors encounter the issues during undergraduate courses, but there are also medical ethics programmes in many medical teaching programmes, generally based on case studies. Most such teaching is on optional courses, but there seems to be good take-up. The University of California, San Francisco medical school even introduced a new clinical ethics course because of student demand – hard to imagine in the British context.

Many of these courses involve lawyers and teachers with training in philosophy. Dr Gillon emphasized they had to avoid prescriptions for particular cases, and must win the confidence of other clinical teachers by mastering some of the medical jargon but also demonstrating they had something extra to offer which would not be provided by an intelligent layman.

Dr Gillon said Britain should open up its medical schools to lawyers and philosophers interested in medical ethics so they would get some clinical experience. But even though the first master's courses are now appearing in this country, Britain is a long way from establishing the cadres of bioethics teachers, commentators and pundits who now flourish in the US.

There may be some advantages in this. One American speaker feared the advent of a new "technocracy of ethicists". But the ever sharper debate on resources and the continuing development of technology may soon outrun the *ad hoc* responses which characterize the British tradition. It was notable that several speakers discussing the Warnock committee's report on technologies for manipulating human embryos suggested one difficulty in subsequent discussion of the report was the lack of systematic thinking about the issues earlier on. If British medical ethics is unlikely ever to grow into the sort of enterprise now seen in the US, we could still do with one or two well-funded think tanks. In the longer term, as Daniel Callahan put it, the problem is to decide: "what kind of society or moral culture do we want medicine to create for us?"

Maggie Richards on a successful alternative to the A level route

How Coventry made access pay

Wendy is a Malaysian student of 22, determined to study law. Her command of English is excellent, her academic record impressive – but it is not recognized by British institutions for entry into higher education.

Zainal is a Malay, aged 23. His examination successes include eight O levels and technical qualifications in architecture. He wishes to study the subject at degree level but his grasp of English has been insufficient to merit a place.

Both have problems common to many overseas students this summer who will apply and be rejected by polytechnics and universities throughout Britain. Yet both are now poised to enter the system: Wendy has a place at university, Zainal has been accepted by a polytechnic.

Their entries have resulted from a year of study on a novel access course which has drawn on the strengths of three separate sectors of post-school education to provide an alternative to the A level route.

The scheme has been functioning as a pilot project for two years at Coventry, under the umbrella of the Coventry consortium – an amalgamation of further and higher education institutions in the West Midlands, originally established to provide updating programmes for local industry.

Under the academic supervision of Warwick University, the scheme embraces three colleges of further education, utilizing teaching skills in the further education sector and combining them with teaching materials derived extensively from Open University foundation courses.

Warwick's higher education foundation programme also differs from other access courses in its attempt to be national, directing students to the institutions best suited to their individual needs rather than regarding them as academic fodder.

Two other facets have been linked into the programme this summer: an overseas marketing strategy designed to promote the British system as extensively as possible abroad, and a counselling service to give guidance to students entering the scheme.

Some years ago Warwick considered an on-campus access course for overseas students, but encountered opposition from its own academic staff, who were reticent – to say the least – about embarking on work at such a level.

From closer involvement with the further education sector through connections with the Coventry consortium, the idea of an access course taught by the colleges emerged. In recognizing that not all students would want to progress to higher education in the immediate vicinity, Warwick then set about determining what validation of its courses could be offered as an alternative to A level – deemed inappropriate for students who would not only be handicapped by language difficulties, but who also had not been immersed in the British education system since childhood.

Open University materials at foundation level seemed to provide the obvious solution. They also offered the added advantage of recognition by almost every academic institution in the country.

To align the materials with the academic year (the Open University operates a calendar year) Warwick has organized a system whereby its own staff will set papers for examinations in June, which will be externally assessed by OU staff.

The programme is being aimed principally at students for whom English is a second language, so particularly strong emphasis is being placed on English language in the curriculum.

Courses are designed on an interdisciplinary basis to give the student as broad an introduction to potential openings within the system as possible. Some specialized areas have been excluded – medicine and graphic art are prime examples. The pattern of provision is determined purely by market factors: the programme will provide courses according to the demands of students expressed in their letters of application.

So far this summer the university has received more than 100 applications, dividing into six main areas of study: law, social sciences, engineering, business studies and economics, social administration and a heterogeneous science group.

Science and engineering courses will be taught at Coventry technical college, where students will follow either the OU science foundation course or, as the OU does not provide an engineering foundation programme, elements of a second-level technology course combined with components of the OU mathematics foundation material.

Other students will be divided between two colleges of further education. For students taking law, part of the course will involve joining first year students at Warwick on one day a week for tuition. Business studies students will receive additional help with mathematics, geared to their future study requirements.

The two pilot projects undertaken so far have proved useful in highlighting some problem areas, and helping further education lecturers tutoring the courses to become acclimatized to the extensive use of OU materials.

One significant feature has been the extent to which overseas students, unaccustomed to British customs and traditions, have found the OU television programmes of immense value.

Henley College course tutor Mr Terry Rees with two of the Malay students.

Visual aids have also been useful in pinpointing references taken for granted in Britain – to institutions such as "Westminster" and "Whitehall".

Counselling has proved an essential feature of the pilot projects, and forms of crucial element of the new programme. Soon after their arrival students receive a talk on the structure of British higher education.

One of the first aims is to make clear the plethora of opportunities available to them. Another intention is to eliminate some basic misconceptions – staff have discovered demands to study computer science in fact disguise a desire to look at business applications, rather than advanced construction techniques.

A third goal is to extract from each student a profile of non-academic expertise, experience over the two pilot projects has shown that many students completing application forms fail to detail relevant items such as work experience.

From the information collected, a full profile of each student is compiled. Students are then encouraged to sift through prospectus materials and select options.

From the options and after further discussions, college staff begin arranging interviews with institutions. In advance of interviews each institution will receive a full profile and college assessment of the student.

In addition to academic counselling, social activities are arranged for the students throughout their stay on the programme, including outings to familiarize them with the British environment. While on the programme, each student is registered not only with the college, but also as an associate member of Warwick university entitled to use all campus facilities.

Until now students have come via Warwick's own admissions scheme. But from this summer Warwick is going into partnership with other major institutions in the system, universities such as Nottingham, Liverpool and East Anglia, and from the other side of the binary line, Coventry and Birmingham polytechnics.

This network will feed students into the programme if their qualifications or A level results are not up to expectations. Students completing the programme will be encouraged to look first to institutions within the network for degree courses, before making their choices.

"We are happy to accept students on the basis that they will come to us if their results are not up to expectation, and return to the institution to follow their chosen degree course on satisfactorily completing our programme," explained Warwick's senior assistant registrar Mr David Warner.

Basing the programme on the three further education colleges currently in use, Warwick estimates being able to accommodate up to 500 students per year. But another four colleges within the Coventry consortium have indicated willingness to join the scheme if demand increases.

The programme now finds itself in direct competition with the types of sub-degree courses offered by the institutions of other Western nations, notably the United States. Three staff from Warwick have been on a canvassing mission this year to the Middle and Far East, promoting both the programme and the university.

To expand on these activities Warwick has gone to the private sector for aid, enlisting the help of the Pitman organization, which specializes in business, secretarial and language tuition, and has an extensive network of schools and agencies operating overseas.

It is hoped many Pitman students will be guided on from their studies at basic and intermediate levels to the Warwick programme. The Pitman agencies overseas will receive a ten per cent commission for every student enrolled.

Students enrolling in 1985 will be charged a flat fee of £3,150 for their tuition, the equivalent of a first year arts or social sciences degree course. The university estimates the full cost, including the price of accommodation, will be in the region of £5,700.

Both Warwick and Pitman staff recruiting abroad have encountered an enormous amount of interest in what Britain's higher education system has to offer.

"It is really a matter of explaining how the British higher education system functions, in comparison to the American model. In countries such as Korea and Thailand there has up to now been no real conception of our system," said Mr Warner.

"Everybody regards British higher education as the summit of achievement. Its standards are incomparably the best in the world, but it is also regarded as so difficult to enter that reluctantly people go elsewhere."

A new guide to access courses has just been published by the University of Lancaster – the first time such courses, whose recent growth has been one of the most spectacular features of adult education, have been catalogued.

A Survey of Access Courses in England by Susan Lucas, administrative officer in Lancaster's department of education, and research assistant Peter Ward, can be obtained from Lancaster for £3. It contains details of "second chance" courses offered by 83 separate institutions in England.

The book begins by defining what constitutes an "access course". Mention them to most people, Susan Lucas says, and they'll immediately think of the courses for Afro-Caribbean teachers at the Polytechnic of North London. She felt the need for a guide to the point where people may reenter education after a period out of it.

The courses listed are run by colleges of further education and similar institutions, and can lead on to higher education at either university or polytechnic. A number have formal links with universities and polytechnics in the regions – either through "feeder" arrangements by which the access course acts as a direct qualification for the degree, or through "open college" federations.

The entry for each course contains its title, name and address of the coordinator, a description of the origins and purposes of the scheme, entry qualifications, the course structure, assessment arrangements and the progress of former students who have gone on to higher education.

Help from the FE student's flexible friend

further education colleges who are interested in providing their own courses. While there's a common theme they'll find a number of possible models.

"Careers advisers may also be interested. Although they concentrate largely on 16 to 19-year-olds the rise in unemployment means they're having to spend much more time now dealing with the needs and problems of older people.

"And admissions tutors in universities should find it is valuable for assessing the qualifications of people who've only done access courses before they've applied. This is why we've devoted a lot of space to assessment – that sort of information other institutions will be looking for."

In spite of the diversity of courses and institutions, she sees a degree of commonality: "This may be because one or two courses have served as a model for the others, though I'm not certain about that. There is a strong emphasis on communications skills, numeracy and literacy, and more stress on the development of study techniques than on content. The aim is to develop skills which can be applied".

The humanities, social sciences, teaching and social work account for the majority of courses: "There's minimal provision in information technology, engineering and the sciences generally. There's a desire to provide courses, but the obstacles are enormous. All these courses need

plate the daunting thought of taking up physics at 24 or 34 to realize why such courses are hard to fill.

"There's the same problem with languages, pure art and music. They're all sequential subjects – it's impossible for someone to take up French and in a year or two be on a level with someone who's gone all the way through school, finishing with a B grade A level."

At Lancaster Sue Lucas is at the centre of a very strong area, but she says: "I can look at the map of England and see areas with very little – East Anglia, parts of the South West and the Midlands.

"Like all non-statutory provision it is very much dependent on the attitude of the LEAs and colleges. Very often getting courses started depends on one person in an authority or a college willing to push hard for it".

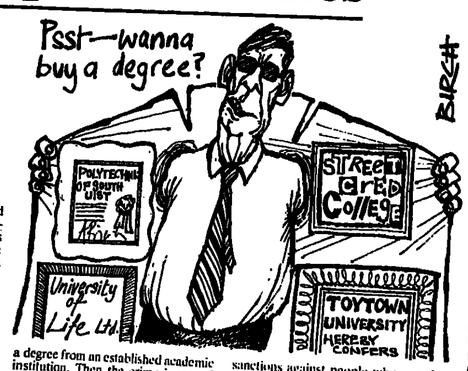
She expects access courses to go on growing, and it does seem unlikely that there'll be any moderating of the demand caused by educational disadvantage and unemployment.

"The only thing that can stop it growing is financial problems," says Sue Lucas, who sees possible reasons of enlightened self-interest driving institutions of higher and further education into backing access projects. "By the end of the 1980s quite a lot of them might be struggling for students and will welcome more mature candidates to keep their rolls up".

Huw Richards

The quackademics

Trade in bogus qualifications is multiplying at an alarming rate, often beyond the power of the Fraud Squad. Adriana Caudrey investigates



Court University, Bradford, or the International University of Cambridge (our inventions) are springing up and multiplying at an alarming rate. Many of them are run by self-styled academics, with all the letters of the alphabet after their names, but with few, if any, authentic educational credentials.

They represent the parasitic underworld of education which operates beyond the law and beyond recognized education. At the most blatant, these "universities" are no more than degree mills, that is individuals or organizations which sell paper qualifications without requiring an examination approved by government or education authorities. Some degree mills demand a semblance of study. Others do not even put up this front.

A shade more "respectable" are the establishments which inhabit impressive buildings set in rolling acres, and which possess lecture halls and studies. They offer a rich menu of subjects to choose from, all served up by a larger than life gallery of academic staff. However, the academic standards, the work, and the examinations do not bear comparison with those of *bona fide* institutions. They are frequently little more than glorified degree mills.

The prospectuses offered range from the impressive and glossy, to the tatty, ungrammatical, and misspelt. Their premises may be West End cubby holes, poky offices, or country houses.

The underground trade in education is thriving on an increasingly qualification hungry society. When jobs are scarce and degrees could be a passport to employment, quack academics can make a lot of money. One or two notorious degree mill merchants have been known to make upwards of £20,000 within a few weeks.

They are also exploiting the trend for "universities without walls", including the Open University, and correspondence courses. These may have inadvertently paved the way for dubious mail order degree courses. Another factor which is playing into the hands of confidence tricksters is the increasing acceptance of unorthodox routes into academia.

Degree merchants' customers range from the dangerously innocent and gullible, to the downright dishonest. While some may be conned into thinking that a phoney college or university and its qualifications are genuine, there are others who buy the degrees with their eyes wide open, as a means of tricking their way into established higher education, or employment.

It is primarily overseas students who fall into the first category. They are frequently seduced by large advertisements which British degree mill merchants place in their countries' newspapers. The most celebrated targets are South East Asia and West Africa. Students' faith in the British higher educational system is abused.

Each year the British Council receives more than 500 complaints and suspicious inquiries from overseas students who have either been conned, or fear they might have been conned by such institutions.

Academics and fraud investigators fear that the more overseas students return home with spurious qualifications, receive top jobs as a result of them, and then are not up to the work, the more this will devalue the good name of British scholarship. The United Kingdom Council on Overseas Student Affairs has now set up a subcommittee which is producing a document to be circulated overseas, aimed at guiding foreign students through the maze of Britain's private colleges.

Prospective students also need protecting from a new breed of trickster, the degree broker. He purports to be in the business of helping students to distinguish between a degree mill and a reputable institution. In reality he is an agent for one or more organizations, and receives commission on anyone he steers in their direction.

Then there are those who are genuinely alarmed at the growth in this black market. However, some alleged investigators are also on the bandwagon, making money from their allegedly exhaustive lists of degree mills, and perhaps being selective about which organizations they expose.

It is thought that there may be as few as a dozen operators in Britain, responsible for opening and closing large numbers of phoney institutions. The Department of Education and Science which has one civil servant who specializes in monitoring bogus degrees has stated that there are between 70 and 80 degree mills in Britain. Seasoned mill watchers reckon the figure is not so high.

Gaps in the law and in the educational vetting system are allowing these merchants to prosper. The loopholes are being exploited to such an extent that the Fraud Squad and private investigators are now trying to stamp out the problem. The Fraud Squad has joined politicians and academics in calling for legislation to outlaw the traffic in dubious degrees.

Inspector Bob Moffat of the Fraud Squad said that legislation was needed which would price degree mill merchants out of the market. They can operate with impunity in this country, and he fears that the current crackdown on the practice in the United States will bring many confidence tricksters to ply their trade over here. He is planning to meet FBI special agent Otho Allen Ezell, responsible for rounding up degree mill merchants in the United States, to exchange information.

Inspector Moffat recently became convinced of the need for new laws after a number of his investigations into degree salesmen had to be broken off because it was impossible to charge them for a specific offence. It is only a clear-cut offence when someone fakes a degree from an established academic institution. Then the crime is one of forgery. If, however, someone sets up a pseudo-university, with himself as self-appointed professor, and dishes out trumped-up qualifications, he is not necessarily breaking the law.

According to Inspector Moffat every case is different and tends to rest upon whether or not it can be proved that the salesman induced a customer to part with money by "specific misrepresentation", such as stating that his awards were approved by the Council for National Academic Awards.

One celebrated example is that of the head of one dubious "university" who claimed in his literature that he had been granted a Royal Charter. All British universities need this if they are to be officially recognized. However, this charter had been granted by a Nigerian prince and is therefore meaningless in this country. But technically this conman had covered himself.

According to Inspector Moffat the person who submits a spurious qualification at an interview is more likely to face prosecution than the person who sells it. "If I invented Sunbury University, made up a certificate, and then went to a prospective employer and said I had a BSc from Sunbury, and if there was no middle person involved (someone who makes and sells degrees), in those circumstances it could be argued I had committed an offence.

"I would have to prove that I was a legitimate organization and issued BScs as part of my normal business."

In other words, if you issue yourself with a paper qualification on a one-off basis you may be charged with seeking to obtain goods or services – in this case a job – by deception, precisely because you do not run a business issuing degrees.

"If you use a middle person to obtain your degrees, and he can argue that he runs a university, because he issues degrees as a normal part of his business – although it is perhaps arguable whether it is up to university standards – then you would not be committing an offence unless you actually told lies".

It is particularly difficult to take sanctions against people who run degree mills because there is no legal definition of a university, nor of a degree. Therefore the exercise becomes one of Alice-in-Wonderland style logic.

Under company law people are banned from setting up businesses which include in their titles the word "university" unless they have special permission from the Education Secretary. However, this provision in the law tends not to be invoked, and if it were, it would only result in a court order to change the word. Failure to observe this could result in a fine for breach of a court order.

Inspector Moffat wants to see introduced a law which would require anyone running a non-accredited institution to state on his degree certificate that the qualification was not issued by a recognized institution: "We would like legislation to be introduced which would price degree mill merchants out of the market. If they decided to flout the law they would have to charge higher prices for their degrees to cover the costs of possible fines, and this would eventually price them out of the market". He anticipates a fine of £1,000 for the offence.

A firm of white collar crime investigators has become increasingly concerned about the growth of academic fraud. Network Security Management has recently brought out a 50-page report, entitled *Pre-employment Screening and Degree Mills*. One of its two authors, consultant Martin Samociuk, is worried at the extent to which people are obtaining jobs fraudulently, frequently assisted by the availability of under-the-counter degrees.

He said: "In the current environment where jobs are highly competitive, and selection is based on qualifications people present on paper, we'll see a lot more of this . . ."

He is particularly concerned about the increased trade in computer science qualifications. He suspects that the trend is well-established in the United States, and is just starting in Britain. "People are applying for jobs with bogus computer science degrees. We don't want unqualified people running around data processing departments."

His firm's investigation of one London degree mill showed that it was case of they have it if you ask for it. They would have no difficulty furnishing a "student" with a computer science degree. Mr Samociuk is particularly disturbed that firms are not sufficiently zealous in checking out the credentials of prospective employees. Employers should contact the Privy Council's office to establish whether or not an institution is *bona fide*.

When asked by one academic researcher whether or not they had ever been duped by a student tendering a spurious qualification, one university answered: "We are always very careful over the acceptance of a student with unfamiliar qualifications and I do not think we have been misled by spurious qualifications. Very occasionally a candidate has falsely claimed qualifications which he does not have and in such cases appropriate action is taken."

Another university revealed: "In regard to degree mills in general we have been plagued for about 15 years by a particular individual operating from a private house about 20 miles away under various titles . . . The previous registrar took legal advice in the early 1970s and was informed there was nothing we could do."

It is not only the absence of legislation which allows degree mills to flourish. They are also able to avoid educational inspections. Until the beginning of the 1980s the Department of Education and Science used to inspect private sector higher education establishments, but it dropped the exercise as part of cost-cutting.

Currently the only hope of distinguishing the good from the bad in private sector higher education is being provided by the recently founded British Accreditation Council for Independent Further and Higher Education. The aim of this body is not so much to uncover dubious institutions as to accredit worthy ones. It will be providing for the private sector what the CNAA provides for the public sector. Its secretary, David Parry, pointed out that the council would accredit institutions on the basis of positive discrimination. Colleges which elected to have an inspection and met the council's standards would be entered on its list of accredited colleges. Those which did not come forward or were found to be wanting would not get a mention.

Mr Parry emphasized that the council had only just drawn up its first list, and it would be another two years before it could be regarded as definitive.

The council has 100 inspectors, most of whom are former HMIs, or former college principals, and polytechnic directors. Mr Parry said: "If our inspectors are going to an institution that offers its own award, we ask them to look at the qualifications of the staff: are they nationally recognized degrees from recognized universities or recognized professional awards? Do the students find employment after their courses? Are the courses moderated by external examiners? We seek points of reference external to the college."

Mr Parry hopes that the existence of a list of establishments which have met these requirements, will cast in doubt the reputation of those which are absent from the list. He said one of his prime objectives was to show that there are excellent colleges in the private sector.

In time he hopes that if a college advertises that it is accredited by the council this will testify to its reputability. He emphasized that his body sets high standards, which might exceed those that the Government might specify if it introduced legislation to distinguish accredited establishments from non-accredited.

He said: "At times we might require an institution to amend its literature to reflect more accurately what we saw there. If an institution offered a degree under the charter of an overseas university, we would want them to include a specific statement to that effect."

Some independent institutions have fallen foul of the Advertising Standards Authority.

Following a complaint to the authority from the Committee of Vice Chancellors and Principals, Somerset Independent University was told to alter a paragraph in its prospectus, which had stated its "approach to degree programmes is innovatory and official recognition has yet to be received". The authority said this should be changed to read: "Somerset University was not established by Royal Charter and therefore official recognition has yet to be sought."

Cracking down on credentials – the American offensive

The most extensive academic black economy is to be found in the United States, where the Federal Bureau of Investigation has launched a successful offensive against diploma mills. Government agents have been aware of the trade in spurious credentials for 30 years or more but, as in Britain, they have been hampered by the absence of laws on academic fraud in most states.

In February, however, the FBI made a significant breakthrough with a successful prosecution of the head of a counterfeit enterprise, which had supplied some 2,500 fraudulent degrees, diplomas and licenses. That case was followed by a spate of further prosecutions.

In the space of one week, federal authorities took action against the operators of 25 diploma mills throughout the United States and disclosed a scheme at the University of Southern California in which some 30 individuals had programmed themselves academic transcripts through the system computer.

In North Carolina, seven mail-order scholars each faced a 31-count indictment charging conspiracy, mail and wire fraud. The Justice Ministry claimed the group maintained a nationwide diploma mill network and issued fraudulent credentials – including degrees, transcripts, certificates, employment references and class rings – to an estimated 3,000 individuals.

According to the indictments, the group at one point boasted of having 20,000 "graduates" scattered throughout the world. Agents with the Federal Bureau of Investigation obtained the names of 3,000 clients and dismissed the larger figure as part of the organization's promotional strategy.

Under a holding company called the Disciples of Truth, Inc., the group was alleged to have operated 22 different colleges, accrediting agencies, vocational guidance centres, divinity schools and a jewellery firm. Under separate corporation papers, said the FBI, they ran two mobile correspondence schools – the Northwest College of Allied Science and the Southwest University.

The chairman of the board of trustees and the director of admissions for Southwestern University took their case to the city council of St Georges, Utah, arguing that their operating licence should not be revoked. Moments later they were arrested by local detectives and the FBI. Within hours, agents in Tucson, Arizona, Columbus, Ohio, and Springfield, Missouri, had rounded up their confederates.

Investigations are now under way into the activities of some 14 adjunct faculty members. All of them are graduates of Southwestern or its affiliates, says the FBI.

While those schools are fictitious and their degrees worthless, authorities also unveiled a conspiracy at the University of Southern California, where falsified degrees and transcripts were being peddled for as much as $25,000 each. Police and university officials were alerted through the federal drug administration in Louisville, Kentucky. Sources report of a scheme linking cocaine trafficking to academic counterfeiting.

An employee in the university records office was sacked and investigations began into the activities of some 30 students. Sources say the probe has focused mainly on foreign students.

In a third, separate matter, an Oregon man pleaded guilty to selling forged diplomas to some 2,300 persons – including 12 British subjects.

In the North Carolina case, special agents with the Internal Revenue Service had raided the headquarters of the Disciples of Truth, Inc in 1982 and discovered a link between the organization and a string of diploma mills since shut down.

The group were charged with maintaining the National Association of Open Campus Colleges and four accrediting agencies all using some variant of the "Mid-Western States Accrediting Agency" in order to further their credibility.

Patrick McQuaid

In the concluding part of our series on demography Andrew Hinde charts the influence of the Neo-Malthusians on Victorian attitudes to birth control

To have and have not

This Liverpool fish hawker and his wife had a family of 11 children. In the days before the fertility transition, large families like this had several economic advantages – the children contributed to the household income, and the older ones could act as child-minders for their younger brothers and sisters, enabling the mother to work. The fish-hawker's family is exceptional in one respect – none of his children died in infancy or childhood. In many late-19th century families, one child in three or four did not survive until its fifth birthday. Right, Annie Besant, freethinker and birth-controller, whose trial (with Charles Bradlaugh) in 1877 was an important landmark in the spread of birth control ideas.

Little over 100 years ago, most married couples in England managed to produce more than six children. Today, the average family size is around two children. In the middle of the 19th century, very few couples appear to have made an effort to limit the size of their families, yet the systematic practice of birth control is now an almost universal feature of married life. This decline in the level of human fertility and the widespread adoption of birth control constitutes what has been described as the "fertility transition".

In the last 20 years, research into the nature and cause of this decline in fertility has grown. One project, carried out at the office of population research at Princeton University, New Jersey, has shown that, with the exception of France, fertility began to decline throughout western Europe remarkably quickly. In Belgium, the decline was under way by 1882; in Germany, by 1890; in Denmark, by 1900; and even in Catholic-dominated Ireland, the decline had begun by 1929.

The number of births per 1,000 inhabitants in England and Wales before 1871 was between 32 and 35; by 1901 it had declined to 28.5; and by 1931 it had reached 15.8, a level similar to today.

The reduced number of children soon attracted the attention of the registrar general. In 1911, a special question was incorporated into the decennial census which asked married couples about the number of children they had. When the results were analyzed, it became clear that, although the decline in fertility was a national phenomenon, there were considerable variations between social and occupational classes. Using a division of the population into five social classes (professional and managerial, intermediate non-manual, skilled manual, semi-skilled manual and unskilled manual) there was an inverse relationship between class and fertility. This relationship became more pronounced during the last decades of the 19th century, since the fertility decline set in more quickly in the higher social classes.

What was especially interesting was that three occupational groups did not fit in with this general pattern. Coal miners and agricultural labourers showed higher fertility than any other groups, while textile workers had, since the middle of the 19th century, been exceptionally infertile. The wives of textile workers married before 1881 produced fewer children than any other group except professional and managerial workers. Eilidh Garrett's work on the West Yorkshire town of Keighley – part of a project being undertaken at the department of geography at the University of Sheffield – shows that the low fertility of textile workers is related to the long hours worked in the mills.

What is much more important (and far more difficult) to explain than the decline in fertility is why couples in all walks of life began to control the number of children they produced.

There are two hypotheses summarised by the Swedish demographer Gosta Carlsson. The "innovation" hypothesis entails the belief that birth control is a recent invention which appeared some time in the late-19th century, and that although couples may have wanted to limit the size of their families before this, they were unable to do so because they lacked access to the required knowledge and technology. Once the means of contraception became available, they were quickly adopted, first by the urban middle classes, and later by the working classes and in the countryside.

According to the "adjustment" hypothesis, birth control is not a new invention; couples have, from time immemorial, known how to control fertility. It was only in the late-19th century, however, that social and economic changes made it worthwhile for couples to adjust their fertility. Carlsson argues that the most important of these changes was the decline in infant mortality. Before the fertility transition, large families like this had several economic advantages – the children contributed to the household income, and the older ones could act as child-minders for their younger brothers and sisters, enabling the mother to work. The fish-hawker's family is exceptional in one respect – none of his children died in infancy or childhood. In many late-19th century families, one child in three or four did not survive until its fifth birthday. Right, Annie Besant, freethinker and birth-controller, whose trial (with Charles Bradlaugh) in 1877 was an important landmark in the spread of birth control ideas

Bernard Crick

Portraits of public men and private functions

Historian and political writers have concerned themselves with two modes of controlling arbitrary power: the first is to put power against power, checks and balances, defence or even rebellion: and the second is law, reason, persuasion – some might add prayer. But there is a third mode, much practised by people under absolutism, or even in free regimes when there is no immediate prospect of changing an unpopular government: satire. "The laughter of free men" cuts the pompous down to size, shows the Emperor to have no clothes, or only foolish clothes.

Written satire is the most famous and most studied; but the printed word has its special dangers. More common, because less easy to stop, is the political joke. "I saw a strange sight. Hitler, Goebbels and Goering walking down the Unter den Linden. Hitler looked real neat, Goebbels has his mouth shut and Goering had a woman on his arm." They cheer ordinary people in dark times. "There's going to be a two party system." "What's the use? One's bad enough." Etc. This will soon all become a matter of pure scholarship, for a professor at the Hebrew University and an Oxford don have boxes and boxes of card-files, each card containing a political joke, cross-indexed by nation and subject matter.

Somewhere between the written and the oral, both in degree of danger and size of circulation, is pictorial satire, political caricature. These thoughts are prompted by a unique private view I enjoyed recently of the Victoria and Albert's exhibition *English Caricature: 1620 to the Present*. This reaches us from the Yale Center for British Art, the Library of Congress and the National Gallery of Canada, so there are many unfamiliar items. It closes at the end of the month, but if you miss it, the catalogue (£6.95) is excellent value both as scholarship and printing, a book to treasure.

Such a price would have been out of reach of even journeymen and apprentices, about the modern equivalent of a scholarly book published by Macmillan. A good deal of official tolerance depended on limited access, except that crowds often gathered outside a print shop when a new item appeared. Some of the best and most lewd attacks on the Prince Regent come from his own collection, purchased either from cynical vanity or to suppress them.

Perhaps only Cruikshank, brought up to the trade, was a worthy successor to Gillray, with his surreal facility for the comic-grotesque. After the 1820s, Daumier and Philipon outshone the English. Political conditions in France were then not entirely unlike those of the earlier English great age of caricature. Yet there are fine and bizarre Victorian cartoons. I want to know more about "Ally Stoper", a cartoon lout with the manners of Andy Capp and the politics of Alf Garnett – his creators plainly mocked our notorious working class xenophobia, but with a sneaking, facetious admiration. There is a lot of Low, of course, and enough of Gerald Scarfe and Ralph Steadman to show how very good they are; and if their savagery and horrid distortions of the human form turns many tummies today, this exhibition demonstrates how much they consciously owe to Gillray and to the faecal humour of Rowlandson who showed, like Swift, that public men have private functions.

Regular readers of this column (like Professor D. Cameron Watt) may remember that my attempt to review Tom Stoppard's play *The Real Thing* was mildly impeded by being thrown out of the theatre at the interval by the manager and four minions. The other Friday was rather different. To my utter astonishment, as if the laws of gravity had failed or as if "The End of Empire" had ended, I found the V and A closed. I realized that I was at last a provincial, for every Londoner presumably knows their response to the cuts. Never on Fridays. There is nothing more closed than a closed museum. (Could universities follow this practice?) Booked on the sleeper to Edinburgh, a desperate phone call persuaded the press officer to open a side gate and let me in (I've known nothing as helpful since the night when I was locked in the National Library of Ireland to finish some work before a morning flight).

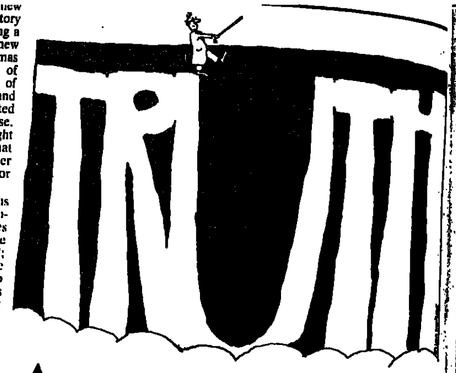
From Italian origins and a baroque style of allegory, somehow a golden age of the political cartoon arose in England in the 18th and early 19th centuries, first elaborate compositions and then more and more free and grotesque line-drawing. Hogarth was a satirist equal to Defoe and Swift, though he denied that his drawings were "caricatures". Rowlandson and Gillray, however, had no such inhibitions, they were both professional and prolific caricaturists.

As with literary satire, I suspect that mid-eighteenth-century England had just that right balance of public liberty and open privilege and arrogance to stimulate satire. Mostly the prints appealed to the city middle class, Johnson's new readership as it were, against the aristocracy; but some are thrusts against themselves, or drawn for aristocratic purchase as mocking counter-attacks against genteel pretensions by the "cits". There are some crude and cheap uncoloured woodcuts, like the black-letter ballads hawked in the streets, but the genius of both Gillray and Rowlandson came surprisingly expensive.

One of my favourite possessions is a Gillray cartoon dated January 21, 1801, entitled *The Union Club*. Savagely Gillray imagines that the suppression of the Irish Parliament was a cause for rejoicing. The British political leaders (including some who had been hung in 1798) carouse together in drunken amity, Pitt wears a green jacket, Britannia and Hibernia kiss each other above the sodden Fox and the Duke of Bedford lies in his own vomit. But it is clearly priced "one shilling", as is my Hogarth of 1763 of a leering, squinting Wilkes holding a "Liberty" banner.

While the catalogue honours Max Beerbohm as a truly great draughtsman, they could have shown something stronger than his cartoon of W. S. Gilbert, something from among the things he could not exhibit in the 1900s. I think of the series *Mr Gladstone in Heaven* (now in the Junior Carlton), his *Edwardessey* or that one cartoon where the dandy's hatred of royal vulgarity spills over. A fat French whore on a chaise longue fingers a new English penny: "Edwardus, Rex et Imp, Def Fid". Ah, but he'll always be Tum-Tum to me."

That was the old spirit of English caricature. The French Mint, we think of Ronald Searle as St Trinians, for the harshness of his *The Rake's Progress* done for *Private Eye* against *Punch* would have cheered the old masters no end. And he is a student of caricature. The French Mint, with great good sense and lack of chauvinism, commissioned medals from him of the "Fathers of Caricature": Hogarth, Gillray, Rowlandson, Cruikshank and (yes!) Edward Lear.



A new perspective for science

True or false? H. M. Collins looks at attitudes to scientific certainty

In the years a new approach to the sociology and history of science has found favour among a few philosophers of science. The new "metascientists", inspired by Thomas Kuhn and the later philosophy of Wittgenstein, begin their studies of scientific activity by deliberately and self-consciously "bracketing" accepted knowledge about the natural universe. They study what is commonly thought of as false in just the same way as what is commonly thought of as true rather than setting aside a special preserve for the accepted facts of science.

If we can caricature the questions that were asked until recently, historians asked: "What heroic battles against ignorance and prejudice were won so that truth could out"?; sociologists asked: "How must the social life of science be organized so that truth will out?"; and philosophers asked: "What is it that scientists must be doing in order to produce the truth and how can they do it better?"

The new metascientists are asking: "How does it come about that scientists believe *x* is the case rather than *y*?" That same basic question is being asked with historical, sociological or phiosophical flavours.

The change in perspective brings about a change in the salient features of scientific activity; it makes science look much more like any other part of our culture. It also questions how science maintains its own image – an image which makes its essentially different from other cultural activities – that of a hard-edged generator of certainty.

The canonical model is maintained because when we learn science, any unusual results are explained by reference to deficiencies in our work; and where trained natural scientists have engaged in controversy for any extended period, this too is explained as due to bias or incompetence by one party. This way, any untidiness in our experience of scientific activity is blamed on human error, and the underlying model is preserved in its pure state. Working scientists account for even their *own* unexpected results in this way. The canonical model is like our shadow – we can never quite attain it – yet we continue to believe that all around us others are achieving it.

What the new metascientists have found is that real science has been with us all along; it is just that it is not the canonical model. The establishment of scientific truth is a matter of the establishment of a consensus, and like any other consensus, this one is messy in its formation and untidy in its outcome. If one adopts a popular metaphor and thinks of the scientific community as judge and jury, and the theorists and experimenters concered with a passage of work as the witnesses and barristers, then typically the outcome of a scientific controversy takes far *longer* than a court case and the eventual verdict is rarely so well defined. Compared to serious dispute in science, the courtroom is a model of speedy, efficient and decisive consensus management.

Science does not need defending by dressing it in the immaculate but flimsy robes of the canonical model. It's the best means we have, and are likely ever to have, for finding out about the natural world. On the contrary, the very flimsiness of the model entails the risk of disillusion and anti-science backlash. What is more, the model is harmful when it comes to teaching our future scientists and citizens to do and to appreciate science.

The canonical model causes trouble elsewhere too: Because "scientific" has become a synonym for "certain", scientists' views are taken to be *authoritative* by lay persons. This leads to the application of "flip-flop logic". Such authoritative pronouncement of science, dressed in its formal, symbolic language, is believed to be either wholly true or the outcome of incompetence, distortion or fraud such as to make it wholly false. To question the results of a passage of scientific work amounts to an accusation.

By contrast, the new model of science sees the locus of knowledge not as the written word or symbol but as a community of skilful expert practitioners. And this implies that they have both the abilities and the fallibilities of craftsmen. Individual scientists' abilities are acquired by apprenticeship rather than by transferring computer-like programmes of information.

Scientists are to be seen, then, as expert consultants rather than infallible authorities. The crucial point is that varying, even contradictory, expert opinions are to be expected occasionally; the cause of variation is not necessarily incompetence, bias or fraud. The flip-flop logic is no longer persuasive.

One implication of the newer model concerns the methods of the "soft" sciences: they must not take as their favoured model canonical but false versions of the hard sciences. To make unfavourable comparisons between natural and other sciences in terms of their "scientific" appurtenances is to misunderstand the nature of the enterprise.

More important for most of us are the implications of the models of science when scientific and technological facts are disputed within the public arena. Such disputes should be understood as the reasonable disagreements to be found among a community of skilled practitioners.

The tension between the canonical model and the new model can be seen in the British legal system. A court case is one of the rare occasions on which it is in someone's interests to try to question a piece of very ordinary scientific work; work that backs up expert forensic evidence. This is in place where the citizen – as defendant, or member of a jury, or judge – is likely to be asked to consider the meaning of expert opinion.

In the British legal system the state, through the medium of the police and Home Office laboratories, handles most of the forensic science. It is the state which prosecutes; thus the defence usually does not have as much access to the scientific evidence and its means of production as does the prosecution. This would be of no significance if data were as neutral as the conventional picture of science makes them out to be. If the same data were the inevitable precipitate of the experimental method *whoever* carried it through, then data produced by the state would as likely speak for the defence as for the prosecution. At the very worst, the problem would turn on matters of intepretation, not evidence. The defence, however, does not always feel this way.

The conflict between reality and the canonical model were nicely illustrated by the head of the Home Office forensic science laboratories, Margaret Pereira, in a *Panorama*, interview in April 1983. The presentor asked why scientists on the side of the defence were not invited to participate in forensic investigations.

Pereira: There have been occasions when defence lawyers have visited forensic science labs to see what is available [pause] but when it comes to advising from how to defend a specific case, I think that that is really asking too much – is it not?

Presenter: Only if you are on the side of the crown.

Pereira: I disagree with that because the point is that these [pause] data are available and what you are asking is for us to tell them how to distort them almost, because that is quite a lot of what is done. The game is different for the prosecution and the defence.

The contradiction between the accepted view of scientific data, and Pereira's practical experience is clear. If they are data, they should speak with like voice to any member of the scientific community whether working for the defence or for the prosecution; if they are the crystallized opinions of experts, then those opinions might crystallize differently for defence and prosecution. In that case disagreement over the soundness and quality of data should be *expected*.

The technological equivalent of the criminal court's forensic science is the evidence of experts at public inquiries. A public inquiry is like a trial in that great energy is expended by various parties in trying to reveal the contingent foundation of judgements that others claim to be based on certain technical authority. It should be no surprise that, for example, different experts will come up with different numbers when they try to quantify the risks involved in nuclear power stations. Neither should it surprise us that there are different opinions as to whether a meaningful number can be reached at all. Different experts will produce different opinions regarding the quantity and justifiability of risks and, likewise, different experts will produce different opinions about the other more formal technological aspects of the working of nuclear plants. It is this, according to Wynne, who examined the Windscale inquiry of 1977, that the presiding judge did not, or could not, take into account. Imbued with the canonical model of scientific rationality Justice Parker treated discussion of the interests underlying expert viewpoints, not as opening out the relevant social factors within the scientific debate but as accusations of personal dishonesty. "I have no doubt as to the integrity of those concerned in all of [the controlling authorities] and I regard the attacks made upon them as without foundation". (Parker, as quoted by Wynne). From within the canonical view – that facts speak for themselves to unbiased observers – disagreement over the meaning of facts can only be interpreted as accusations of dishonesty. This is the "flip-flop" model again. It is either wholly true and inviolable, or it is the wholly false – the product of lies, fraud or culpable incompetence.

We need to learn to live with a new model of science if we are to avoid the growth of anti-science, and if we are to play a proper part as citizens in an increasingly technological society. We understand the fallibility and interests of financial advisors, lawyers, politicians, art and literary critics, doctors, builders, car mechanics, and travel agents, and in the case of none of these professional groups does our knowledge of the interests-base of their advice lead us to conclude that they are not more expert in their areas than we ourselves. Neither anarchy nor nihilism follows from the recognition of the human basis of expertise, all that follows is the realization that *there is* neither magical *nor scientific* escape from the uncertainties within our decisions.

The author is director of the Science Studies Unit at the University of Bath. His book Changing Order: Replication and Induction in Scientific Practice, *is published by Sage.*

Above left, Crown Prince Hirohito on an official visit to Britain in 1921. Centre, mushroom cloud over Nagasaki after the dropping of the atom bomb. Above, a fair in honour of the Shinto god of commerce in the rebuilt central shopping street of Hiroshima.

How can we be ourselves?

Louis Allen on the national identity crisis provoked by Japanese rewriting of history

Mizu ni nagasu – let the water wash it away – is a phrase the Japanese use about the past. It is rather more than letting bygones be bygones. There is a kind of eager obliteration of unpleasantness implied, so that the future is untrammelled.

Shichihei Yamamoto, the essayist, made the same point three years ago in an essay entitled *What was the Pacific War for the Japanese?* "We make an absolute out of a hinge of time," he wrote, "and then turn it into a new point of departure. What went before is obliterated or denied – that is the traditional Japanese way of life."

The sudden volte-face of the Meiji period, accepting the once detested westernization and modernization, is an example of this – so is the U-turn adopted by the Japanese under the seven years of American occupation.

Not everyone accepts that U-turn, however, nor does it result in a turning-away from history. There is a Japanese obsession with re-interpreting history, like the obsessive preoccupation with identity. In fact the two have the same roots. Hence the febrile reaction to press accusations, in 1982, that the Ministry of Education officials who operated the *kentei seido* (textbook authorization system) had interfered with history texts and substituted the word "advance" for the word "invasion" when speaking of Japanese aggression towards China in the 1930s.

> **"The time has come when we must explain why Japan waged the Pacific war"**

The Chinese and South Koreans made vigorous protests, so did the Okinawans, who claimed that references to Japanese army massacres of Okinawan civilians had been expunged. When the dust settled, Professor Shoichi Watanabe, of Sophia University, pointed out in the magazine *Shokun!* that no alteration of texts had taken place and that the uproar was based on the erroneous report of a single journalist which had been taken up uncritically by the rest of the press.

No doubt the press, the Chinese and the Koreans all jumped the gun. But the system does give cause for concern and it is disingenuous to claim that it is not censorship, because the ministry will not provide schools with an author's books if he doesn't toe the anonymous checker's line. This itself is far from neutral, as there is a close link between the ministry and the ruling Liberal Democratic Party, which has its lobby of education specialists, the *bunkyo-zoku* (education tribe), so the surveillance of textbooks is a party issue.

The close link between civil servants and the LDP is a fact of life. This is precisely why the *kentei-seido* is a constant target for the left-wing teachers' union, Nikkyoso, for which the authorization of historical accounts of Japan at war on the mainland of Asia is simply a device to implement control of the education system. This explains Nikkyoso's passionate support of the Chuo University professor Saburo Ienaga, who has been involved in litigation with the ministry for more than a quarter of a century over the screening of his texts.

One example will serve. Describing the killings after the fall of Nanking in 1937, Ienaga wrote: "Immediately after occupying Nanking, the Japanese army massacred a large number of Chinese servicemen and civilians." On the grounds that this sounded like a systematic massacre by the army, Ienaga was told to re-write the description as "the Japanese army's unorganized action which took place in the midst of confusion". After the complaints made by the Chinese government in 1982, Ienaga decided to insist on his original wording and to re-insert it by means of an *erratum* slip. The ministry refused, saying there was nothing to correct.

The 71-year-old Ienaga is, of course, more than a writer of textbooks. He is the author of *Japan's Last War*, an attack on the "arrogant and irresponsible" military who both destroyed Japanese democracy and sent their armies "trained with calculated brutality" into Asia in the 1930s and 1940s, and only surrendered when they had brought down upon their own people a devastation unparalleled in Japanese history. The book was written in 1968, at a time when Ienaga feared that nostalgia and the time were eroding the realities of war.

To exculpate the Japanese army's behaviour in the Second World War, the old field-marshal Hata had put the blame on the people as a whole. Conscription had brought the entire range of the population into the army, so atrocities indicated that the moral life of the whole nation had deteriorated.

Not so, says Ienaga: "The atrocities committed by the Japanese army and navy attest to the moral degeneration of the ruling élite." Nor will he allow the case that is made – in Japan and elsewhere – that this élite was the liberator of Asia from European colonialism: "To call Japan's disgraceful and bloody rampage a crusade for liberation is to stand truth and history on their heads."

It is easy to see why some younger Japanese dislike Ienaga's stance. "Japan went into the Pacific war in self-defence," wrote Yoshihiko Eguchi to the *Japan Times* (August 28, 1982). "Thirty-seven years have passed since the war. The time has come when we must explain to our neighbouring countries why Japan waged the Pacific war. And as a first step . . . history textbooks should be revised. I presume that my feelings are shared by a considerable number of Japanese."

The "explanation" takes different forms. In the monthly magazine, *Chuo Koron* (April 1983), an article by Michiko Hasegawa of Saitama University not only adopted the description of the war as envisaged by wartime propaganda (and, as such, banned during the occupation), but also resurrected the right-wing novelist Fuseo Hayashi's *Dai Toa sensо kotei-ron* (An affirmative view of the Greater East Asia war).

Hayashi's thesis is that what happened between 1941 and 1945 was really an episode in a hundred years' war which started when the British navy shelled Kagoshima in 1863. The guns which had blown Indians from their barrels after the mutiny and compelled unwilling Chinese to accept the humiliation of opium sales, were now directed at Japan. In self-defence Japan felt the need both to "expel the barbarian" and to "civilize and enlighten" its people.

These two things are usually seen as contradictory – for Hayashi they are complementary, both means of facing the threat from the West. Japan may have ended up fighting the nations of Asia, its purpose was to save them.

Taking up Hayashi's case, and modifying it, Hasegawa questions whether Japan was indeed totally defeated. If you ask Japanese war veterans why they fought, they answer that they were fighting to liberate Asia. "And indeed, Asia was liberated. It is a curious logic that denies any connection between that purpose and the war's outcome."

Hasegawa is irritated by Japanese insistence that they alone were in the wrong, and it is here she parts company with Hayashi. What Hayashi dismisses as the "dementia of the defeated" she interprets as a phenomenon corresponding to what the nationalist General Kanji Ishihara called "100 million people united in repentance". Ishihara was not apologizing for having helped cause the war, but was suggesting that the responsibility for the defeat should be shared by the entire nation.

Underneath "repentance" lay a deeper regret that the Japanese had been forced into "uncharacteristic" behaviour since the mid-19th century, by accepting westernization and discarding traditional Japanese qualities.

The upshot of the 1945 defeat was that Japan would henceforth refuse to accept the confrontational view of the world – friends and enemies – implicit in the Western outlook: "The Japanese determined never again to take up residence in the violent Western-style international community . . . based on this philosophy, postwar Japan's energy was directed towards reconstruction rather than revenge."

On the other hand, in the rest of the world, power is what counts, and the Japanese will be vulnerable to power exerted by others while they are trying to live accordingly to a totally different vision. "Japan has its characteristic illusions and other countries have theirs." To review the significance of the war is to try and define what Japan's characteristic illusions are, what its identity is. Never before in Japan's history, claims Hasegawa, was it necessary to "wage war to preserve our identity".

A conspicuous example of westernization was, of course, the acceptance or imposition – depending on which side you are on – of the new constitution of 1946. This constitution, and the censorship of the occupation period which forbade criticism of it, is the *bête noire* of Jun Eto, professor at the Tokyo Institute of Technology. His constantly reiterated case is that censorship falsified Japanese thinking to such an extent that three or four decades later the Japanese are still unaware of what was done to them.

> **"It is tempting to assume that the revision of war is a form of resurgent nationalism"**

That there was censorship is, of course, true, and like any other censorship it committed absurdities. On the other hand, the Japanese society which eventually issued from the occupation period had a freedom of expression unheard of in the period to which Eto and those like him look back with longing.

There *are* pressures to modify strictures on the Japanese past, but these are rarely as blatant as the *kentei seido* system of the Ministry of Education. They derive more from the feeling that Japanese historians should not criticize Japan's military past in terms which would be more appropriate in the mouths of British or Americans. A good example is a three-man review of Tadao Morimoto's book on the planning failures of Japan's wartime leaders, *Masho no rekishi: Makuro keiei-gaku kara mita Teiheiyo senso* (Devil's history. The Pacific War. The Macro-management studies viewpoint).

The book is an impeachment of Japan's war-time leadership, and in a sense none of its facts is really new, nor is its stance. But it was its unmoderate language which irked one critic, Professor Yamazaki of Osaka University. " 'Arrogance that spits in the face of heaven'", he said, "that is how Morimoto describes Japanese leadership, 'perverse dreams à la Don Quixote', 'mad dogs with turned-up eyes', 'brain-softened schizophrenics', 'stupid blockheads' " To which another critic, the writer Saiichi Maruya replied: "That's exactly how I used to think of them when I was young!"

Not to be put off, Yamazaki went on: "It's all very well for you to have thought of them in that way when you were young, but now, when the war is over the Japanese war leaders have been punished as criminals, I think it's a matter for regret that such phrases can be used in books written by a Japanese."

To the British reader, accustomed to his generals being called donkeys and worse, this seems over-sensitive. The reason is plain. Even simple narration of war is contentious in Japan.

The history of the Second World War, whether we call it the Pacific war or the Greater East Asia war, really constitutes Japanese experience of what the First World War was for Britain and Europe. It is their equivalent of God matching them with his hour, of thousands of young lives lost in jungle mud or on remote coral islands.

Imphal and Leyte are their Somme and Verdun, in which the whole nature of the national enterprise in war is called into question. The British and Americans in the Far East were conjugating the verb "to have" – for the Japanese, it was the verb "to be". That is why there can be no consensus in the history of events in which they are the cruel aggressors and the pathetic victims, the tyrannical oppressors and the liberators, the sophisticated planners and the clumsy improvisers.

That much of the recent analysis comes from the right wing makes it tempting to assume that the endless revision of the war is just another form of resurgent nationalism. It was far more than that. "Who are we?" asks Professor Hasegawa. "How can we be ourselves?" Even though the focus may be shifting a little towards the occupation, there is no doubt that Japanese historians of the war seek the answers to those questions in the way they behaved – or were made to behave – outside their own country in the years 1941 to 1945.

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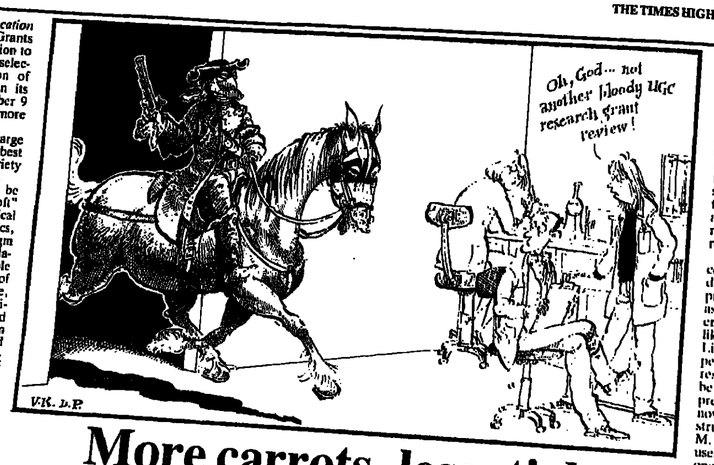
Next week: shaping a post-war philosophy for Japan; and the division of Korea 40 years on.



More carrots, less stick

Tony Becher examines the issues behind the University Grants Committee's new research funding strategy

In its *Strategy for Higher Education into the 1990s*, the University Grants Committee announced its intention to develop "a more systematic and selective approach to the allocation of general funds for research." In its letters to universities of November 9 1984 and May 9 1985, it has put a more definite shape to that intention.

The word "research" covers a large variety of different activities. How best to characterize and analyse that variety may be a more contentious issue.

An intuitive distinction can be marked between "hard" and "soft" fields of knowledge. An archetypical form of hard knowledge is physics, while history embodies the paradigm of soft knowledge. The first is cumulative, open to replication, and capable of being summarized in terms of general laws. The latter is reiterative, particularistic, and not easily susceptible to broad generalizations. A second and even more familiar distinction can be made between pure and applied research activity. The former is concerned with seeking explanation or achieving understanding; the latter with developing a product or improving a field of practice.

The two sets of distinctions – hard and soft, and pure and applied – can be combined to form four broad categories of research activity. These may be labelled hard pure, hard applied, soft pure and soft applied. As an approximation, the distinctions in question correspond to the familiar disciplinary groupings of pure sciences; technologies; humanities and pure social sciences; and applied social sciences.

No serious attempt has been made to argue that academic research forms a coherent unit across these four domains. It is sometimes suggested that hard applied research is a derivative (and possibly a degenerate) form of hard pure research. This position has been vigorously questioned by Derek de Solla Price.

Hard applied research activity originates in, and is justified by, a concern with tangible products. This is evident enough, for example, in the field of pharmacy. As the following brief selection from a catalogue of current research in one particular pharmacy department suggests, the emphasis tends to be on development or evaluation or both:

- Evaluation of drug monitoring equipment;
- Development of novel contraceptive systems;
- Ongoing research in drug delivery systems within the human body;
- The evaluation of aerosol-delivered mucolytic agents.

Despite the fairly close relationship between pharmacy and chemistry, no chemistry department would display a research profile which remotely resembled this one.

In a similar way, the temptation to argue that soft applied fields are parasitic on soft pure disciplines has been strongly contested by Paul Hirst recently. The main difference between the two lies in the emphasis on what Hirst calls practical principles: typically, soft applied research originates in, and is justified by, a concern (in the broadest sense) to improve professional practice. As in the case of hard applied research, the emphasis is on development or evaluation or both.

Again, an extract from a catalogue of sponsored research in one education department illustrates the point:

- Development and evaluation of school management training;
- A formative evaluation of a new design framework and certification process in Youth Training;
- The design of a computer-based system to help trainee teachers in lesson planning and evaluation;
- A programme to help heads and teachers to initiate their own policies for staff development.

Even though history and philosophy are sometimes described as foundation disciplines for education, no history or philosophy department would have a research profile of this kind: indeed, most of them would have no sponsored research at all.

Reality, unfortunately, is not as tidy as this summary implies. Even within the boundaries of a single discipline, there is not only a wide range of different types of research topic, sometimes stretching from pure theory to direct application, there is also a wide range of research modes reflecting these differences in theme. To regard academic research as undifferentiated between disciplinary groupings would be an error of a remarkably unsubtle kind. Even to regard it as homogeneous within disciplinary groupings – and indeed within a single discipline – is an error of a more subtle kind:

> Research in physics looks very different from research in social work; but at a closer level, research in electronic engineering looks different from that in civil engineering; and at a closer level still, research in intellectual history looks different from that in demographic history. To complicate the matter further, one can identify common research styles running across apparently quite widely distinct fields of inquiry. Research is a complex, multi-faceted and far from unitary concept.

In a study of a single laboratory in *Social Studies of Science*, Vol. 12, Karin Knorr-Cetina develops earlier notions of how scientific reputations are built up. Her study identifies a marked concern "with maintaining, increasing or displaying value . . . not the value of some product, but the value of the scientists themselves". Reinforcing this point, "it is a market . . . where the commodity is scientists and not a market for the products of free – or semi-free – entrepreneurs".

It is a common failing for sociologists of science, as indeed for students of higher education, to extrapolate from findings in one particular field (such as physics) to a much wider context (such as pure and applied science as a whole). However, Knorr-Cetina's analysis is borne out independently by my own research into a variety of disciplinary cultures. What she says also comes close to Halsey and Trow's notion, in *The British Academics*, of academics as one-man businesses though with the emphasis that what they are selling is themselves.

Individuals do not exist in isolation

Knorr-Cetina goes on to argue that, even if this point is granted, it cannot be assumed that individuals exist in isolation. What they do is necessarily a part of a working context of some kind. In research, this context is typically not the researcher's own department. It is commonly identified in the literature of the sociology of science as a wider professional reference group – a particular "scientific community". Knorr-Cetina suggests that even this broader frame of reference is too narrow to reflect actuality. Her claims will doubtless give rise to further debate.

This important point here, however, is to note that, as Martin Trow wrote in *Studies in Higher Education*, Vol. 1, No. 1,

> "the department qua department is less significant for the furtherance of its members' research than it is as a centre of graduate training and the academic career. The true research communities are the "invisible colleges" – the handful of people around the world working in some sub-discipline or line of inquiry".

This is understandable enough, given the requirement that departments have to be organized on the basis of teaching as well as research. It is only in a few exceptional cases that there will be a concentration of several tenured academics in one particular specialism in any given department.

As a result, departments are best conceived of as holding units for individually more or less active researchers, whose professional contacts will more often than not lie outside their departments and their institutions. To say this is not to deny the importance of departments in defining and defending the collective interests of the disciplines they represent, or in recruiting and educating students.

Trow, in the same article, went on to discuss the subtle interaction between teaching and research:

> "There is a very considerable division of academic labour, both within and between departments . . . a considerable variability in individual talent, preference and disposition allows people actually to distribute their time and energy very differently among the various functions of the department: The academic division of labour . . . allows the academic department . . . to perform in actuality a wider range of functions than would be possible if its members were more homogeneous in orientation and personal preference."

The UGC's plans for exercising selectivity in research funding were triggered off by a concern that the steadily deteriorating total budgets for the university sector could lead to an overall reduction in the quality of research. The only effective remedy, it was suggested, must be to discriminate between research of high quality and research of lesser quality, and to concentrate support on the former. What began as an issue of public expenditure policy has thus rapidly been translated into a matter of research policy (less resources for some, more resources for others).

It has long been the case that resources for "big science" have been concentrated, either within chosen institutions (e.g. Jodrell Bank and Cambridge for radio astronomy) or between institutions (e.g. Harwell and CERN for nuclear physics). But on a comparative scale, the costs of research in most humanities subjects are negligible: there does therefore seem to be a fashionably doctrinaire aspect to the insistence on rationalizing even the smallest elements in the academic budget.

The equity of the punishment would seem justified by its being administered, punctiliously if not impartially, to all who are deemed to deserve it. Driving the message home, and further elaborating on it, the recent Green Paper, wittily entitled *The Development of Higher Education into the 1990s*, asserts that: "Greater concentration and selectivity may mean that some departments or even whole universities will lose research funding from the UGC. Universities will still have discretion over the funds at their disposal, and be able to seek research funds from other sources. Research will be a consideration in the necessary process of rationalization."

So the UGC's policy for selectivity in research poses two sets of problems.

Although it may be administratively convenient to identify individual departments as the appropriate units for research, Knorr-Cetina's argument suggests that departments have in fact relatively little control over individual, entrepreneurial researchers – and less still over their external research contacts. An individual historian cannot easily be prevented from getting a grant from the British Academy to work on the archives in the Bibliotheque Nationale, any more than an individual mechanical engineer can be dissuaded from doing a reasonable amount of consultancy for a particular firm.

Departments have relatively little control

The research standing of a department – in the majority of disciplines – is little more than the aggregate of the individual reputations of its members. There will be periods when a given department is prolific in research terms and others when it is relatively unproductive. Ageing departments may be less favourably placed in the research stakes; those which are able to recruit young ambitious academics may find themselves in a better position.

It will be far from easy to ensure fair judgement from the centre between every department in every subject area in every university. "Performance measures" of the kind currently being espoused constitute an attempt to make complex judgements in a highly over-simplified way. For example, the suggestion that each department might list its five most significant publications implies that there is a viable mechanism within the UGC to aggregate and fairly to assess the large mass of resulting data of an exceptionally diverse kind. The task will be liable to the same accusations of unfairness as were levelled against the UGC's discriminatory cuts in 1981.

Even assuming that the chorus of complaints, arguments and appeals eventually dies down, the system will then apparently be left with "entire departments funded only to teach and not to do research". This is not to say that their members will not do research: only that they will not be funded to do so *by the UGC*. As is acknowledged in the Green Paper, it will be virtually impossible to control the entrepreneurial efforts of staff to raise research funds. This has already happened in public sector institutions which were specifically set up to have no research role. The phenomenon of "academic drift" would be no easier to stem in the universities than in the polytechnics.

However, it is the effects at the individual level which would be likely to prove most destructive. In any department declared unworthy of research, the most ambitious members are likely to make strenuous efforts to move elsewhere in order to avoid designation as second-class academic citizens. In replacing them departments without research funding would have little opportunity to fill the vacancies with similarly active researchers.

The strategy proposed by the UGC also calls for institutional review and control. In theory, universities will not be bound by the central judgements on their departments' research performance. In practice, it may prove extremely difficult to remove even manifestly inadequate departments from those departments "selected" by the UGC to be worthy of support, and to redistribute them to departments deemed unworthy. Even if this not so, it might be worthwhile considering what an institutionally-based research committee would be expected to do in relation to soft pure and applied areas of inquiry, as well as in relation to hard pure and hard applied research.

In the majority of universities, committees would attempt to weigh departmental research profiles and priorities across the board, and to assign orders of merit to them. However, there is no possibility of comparing like with like. In a typical English Literature department, one might expect to find more scholarship than research – but there could also well be one member of the department preparing an edited text of a forgotten novel, one who is engaged in applying structural criticism to the novels of E. M. Forster, one who is studying the uses of myth in T. S. Eliot's poetry, and one who is working on a history of High Norse literature, and so on.

What kind of window dressing would one develop to produce a coherent picture of the department's work?

It is often suggested that, in the absence of course validation, it is those who put together the most convincing case who do best, rather than those who have the most satisfactory courses on offer. In the same way, one might speculate that the rewards in terms of research support will go to those departments are most skilful in the deliberately plausible set of departmental objectives, rather than to those who are properly concerned to pursue matters of excellence.

It is not easy to envisage the procedure for assessing the merits of different departmental research profiles within a given institution, let alone outside it. Those who have served on faculty promotion committees will know how difficult it is to compare the qualities of a promising geographer with those of an able chemist (or, still) of a well-regarded social science tutor.

It is a common tendency of outside policy-makers to miss their target because of inherent limitations in the measures available to them for the orientation and control. The weaknesses in its standard operating procedures appear to have impelled the UGC towards a strategy which ignores commonsense and overlooks common knowledge. Academic departments are being treated as if they were homogeneous rather than multifarious in their constitution; research is being regarded as if there were no significant differentiations between and within diverse fields of study.

It might be appropriate to suggest means of tackling the problem in a way that would seem to go less against the grain of current practice. First, at the intra-institutional level, the committee might encourage universities to institute peer group review procedures as a starting point for the assessment of their departments' research capability.

An approach along these lines would at least help to ensure that institutional judgements could be more closely related to the degree of support of the scholarly community in a given field for what is being done and planned in each department. Inter-departmental comparisons would still be very difficult, but they would at least not be between sets of raw, entirely unprocessed data.

Second, at the inter-institutional level, rather than imposing its own judgements, the UGC might be wiser to reinforce competitive market mechanisms. It might introduce a modest reduction in the level of research funding, for every university and every department, and then use some of the resulting savings to institute a matching grant scheme.

Those departments which are awarded outside grants, from research councils, foundations, governmental agencies, industrial sponsors and the like, would be entitled to a UGC supplement proportional to the total funding received. The committee would thus be able to rely on the collective judgement of established grant-giving agencies rather than on its own inevitably limited capacity to assess research potential. In doing so, it would also move from its present punitive strategy to one that has been found to be noticeably better for morale – to use the carrot rather than the stick.

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BOOKS

Organizing the present in terms of the past

by J. D. Y. Peel

Islands of History
by Marshall Sahlins
University of Chicago Press, £21.25
ISBN 0 226 73357 2

Exemplars
by Rodney Needham
University of California Press, £20.95
ISBN 0 520 05200 5

Somewhere between nature and history lies the terrain of anthropology. For a long time anthropology did not worry much about the exact location of these boundaries. Now they have again become problematic. Sociobiology has been a main reason for this on one side, since it has seemed to arrogate to itself one perennial objective of anthropology: to speak about "human nature". On the other hand, many anthropologists have come to feel that the suspension of time, the indifference to history, which were hallmarks of the functionalist and structuralist schools under which such major advances were made, could no longer be sustained: historicity had to be reincorporated. The two sides of this problem are here evident in two very different books by two of the leading anthropologists in the United States and Britain respectively, each in powerfully individual tones.

Marshall Sahlins's *Islands of History* is a dazzling book: deeply grounded in his mastery of Polynesian ethnography, but also wide-ranging in its comparative references, moving between cultural "readings" of major events in Pacific history and broad statements of historical/anthropological method. It comprises five essays, free-standing of one another but interrelated. Sahlins has a wonderful eye for telling detail, and is frequently very witty. The marks of his long *affaire* with French scholarship are very evident – in references, especially, to Dumézil, Vernant, Bourdieu, de Saussure, the Annales historians, Clastres – but above all it is the classic Frazerian theme of sacred kingship, and its realization in some of the Pacific societies – Hawaii, Fiji, Maori – which enthuses him.

The centrepiece, where he treats his topic in exemplary fashion and shows what a historical anthropology might be, is his Frazer lecture: "Captain James Cook; or, the Dying God". It is an extraordinary and poignant story, whose coincidences are such as almost to give credence to the view of history as the work of an Invisible Hand. Cook, arriving at Hawaii at the time of the Makahiki (New Year festival) in 1779, circumnavigated the island in a manner closely parallel to the image of the god Lono at his annual return, and was in fact received as Lono. Lono represents powers of nature which challenge but are symbolically overcome and annexed by the Hawaiian King. Cook thus became a factor in the interplay of local forces between chiefs and priests, the commoners and the chiefs. Cook (as Lono) departed pretty well on schedule, but when a broken mast forced his culturally anomalous return, he had to be viewed as the King's enemy; and it was the King's Defender, Nuha, who killed him – ironically with an iron spike, probably made in Birmingham, an apt material symbol of the world-historical forces just beginning to engulf the Pacific islands.

"The Death of Cook" by Johann Zoffany, *circa* 1795.

Such a demonstration, of how a particular historical sequence is enacted according to the prevailing cultural categories, requires extension in two directions. The first is to elaborate how the categories work. Chapter one moves to an explication of the ethos of Hawaiian society from the famous sexual welcome which Cook's sailors received from the Hawaiian women. The saliency and pervasiveness of the erotic in Hawaiian culture arise, Sahlins argues, from the fact that for them "the universe is a genealogy . . . a total project of sexual reproduction". The sociological corollary of this is that "[social] structure . . . is the sublimated form of its forces of sexual attraction"; lineages are not determinate social forms but arguments or possibilities. Sahlins has a point of wide relevance when he notes that anthropologists have not been happy with societies of this kind, though there are many of them: societies which are performance or culture before they are structure. An orientation to history is also entailed here: new relationships are processed through old categories, whose functional import is transformed even at the same time that novelty appears annulled.

This is all made more specific in a chapter "The Stranger-King", which takes its cue from Dumézil's work on Indo-European concepts of sovereignty. It is very widely held that political domination does not arise from the people, but from the outside; the King is a stranger, whose legitimacy rests on usurpation. Sahlins shows that the same symbolism is present in Roman legends of origin, Fijian royal installation rites and the Hawaiian Makahiki, in which Cook was once the star performer. Male/female is the cardinal metaphor for a whole range of combined opposites – chiefs/people, sea/land, King/priest, wife-taker/wife-giver, eventually British sailor/Hawaiian woman. In possessing the land, the King assumes a dual character, counterposed to society as well as incorporative of it; and divinity is dual too, for it inheres both in the living chiefs and in the gods of the land.

The remaining chapters are more addressed to the general issues involved in a historical anthropology. Least successful, despite much of incidental interest, is "Other Times, Other Customs", whose main theme is that different kinds of society have different modes of historicity. So far, so good, but I am not convinced by his concept of "heroic history", where the social system "multiplies" the action of the King, giving him a disproportionate historical effect. The crucial issue arises when we consider the radical social consequences of Cook's impact on Hawaii: gods desacralized, chiefs challenged, an entire social order subverted. For in being implemented, cultural categories submit themselves to refractory, external determinations and thus infused with new practical values.

In the final essay, Sahlins is led to challenge those antinomies such as change/stability or event/structure which sustain the opposition of history and anthropology. Perhaps he goes too far here: the issues are not resolved by quoting Pouillon's epigram: "the more it stays the same, the more it changes".

There are degrees of continuity; instances where prior cultural categories shed rather less light on processes of change; even limiting cases, where such "anthropological" concepts as culture may give us less purchase on historical questions. But Sahlins's essential message is absolutely valid: anthropology is involved in history because "culture is precisely the organization of the current situation in terms of the past".

Rodney Needham's book, for all that he shares Sahlins's debt to structuralism, is very different. This is a strange work, a concatenation of literary/philosophical essays which Needham calls "a history of ideas without history". The last phrase is the operative one, for though he considers in chronological order a series of writers – Archilochus, Sextus Empiricus, Robert Knox (ethnographer of Ceylon), Locke, Psalmanaazaar (fraudulent ethnographer of Formosa and Dr Johnson's friend), Swedenborg (the mystic), Wittgenstein (on Frazer), Dumézil, Casiafieda (probably fraudulent too) – neither their temporal relations, nor their pastness, nor their historically specific features are of interest to him. Repeatedly, he calls himself a "comparativist", which means that he seeks the common forms or principles that underlie cultural and historical diversity. Needham writes acutely, and his "exemplars" are not commonplace, though the universal principles which they are argued to exemplify (such as the strong human inclination to organize experience through dual symbolic classification) are not such as to surprise any anthropologist.

Does he point a way forward? I am doubtful. Some of his principles (such as dyarchical conceptions of sovereignty *à la* Dumézil) are certainly very widespread, but do not seem universal. If so, Sahlins's "cultural-historical" way of dealing with them seems much more illuminating than Needham's speculations about their being a "natural proclivity of thought", even the unconscious product of a "cerebral vector". Inside the man of letters there is a sociobiologist struggling to get out – but not struggling very hard. Talk of "cerebral vectors" is a mere tease unless we are prepared to go the whole physiological hog and get direct evidence of how the brain works. But Needham shies from this course: the "proclivity" is itself constituted purely by the order detected in the social facts which are its evidence.

From such circularities the student of comparative social facts, if he will not do physiology, can only be released by turning to history.

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Social purpose

Social Evolution
by Robert Trivers
Benjamin Cummings: Addison-Wesley, £19.95
ISBN 0 8053 8507 X

In the early 1970s Robert Trivers, an assistant professor at Harvard University, made a number of critically important conceptual advances that helped sociobiology to develop as an integrated discipline within the framework of evolutionary biology. He defined and developed the idea of parental investment as the key to understanding much of social evolution. He showed us why parent-offspring conflicts are likely to develop at around the time of weaning, he pointed to the importance of reciprocity as a reason for the evolution of altruism, and he showed how anomalous sex ratios may be understood in terms of his investment theory. Trivers left Harvard for Santa Cruz in 1977, since when not much has been heard from him.

In 1978, I went to Harvard to teach sociobiology. I was filling in for Trivers and I discovered another side to his character. He had been an astonishingly effective and inspiring teacher, and at Harvard that is particularly difficult. Undergraduates flocked to my course hoping that it would somehow match up to Trivers's. Graduate students lined up to meet me hoping that I had Trivers's deep understanding of their scientific problems. Robert Trivers had left behind a reputation, but there was hope that it could become a legacy, because he intended to bring his lectures together and publish them as a textbook. We have waited eight years for Trivers to write his book, eight years during which it was widely rumoured that the book would never be written. Now it has appeared. I expected it to be out of date and I was wrong.

There are many facets to this book that make it a classic on publication: the topic has not been covered in this way before; the intended readership ranges from the layman to the research worker; the presentation of figures and photographs is extraordinary; and the text covers almost all the relevant studies right up to 1985. Trivers has succeeded on all counts. But exactly how and why?

Trivers's first problem was to seize his reader's imagination in the opening sentences. Since the text is meant to be intelligible to laypeople or social scientists, the natural way to start would be with an introduction to genetics. But genetics is a dry topic, so Trivers starts with design. Organisms seem designed to do something. That "something" turns out to be successful reproduction – to leave as many surviving offspring as possible. This leads easily to the concept of natural selection which can be shown to act on social as well as on morphological variation. Using this way in, Trivers is able to introduce several fascinating biological examples and solve paradoxes – like the sterile workers in social insects who hardly seem designed to maximize their reproductive success.

Only now does Trivers introduce us to genetics, and by this time even the naive reader is ready for it. He then leads us through kinship theory, parental investment, sexual selection, the sex ratio, the evolution of sex, mate choice, and the evolution of cooperation, deceit and self-deception. These latter topics may, on first encounter, seem to be little more than a rewriting of his old papers from the 1970s. They are not. Trivers weaves other relevant sociobiological topics into his own special framework. He has not stopped assimilating information and he has been able to accommodate new findings into his own view of life.

I have always thought that one of Trivers's weaknesses is his lack of formal thought – that is, he rarely produces simple mathematical models to reveal the assumptions behind any particular conclusion. However, this weakness leads to an intuitive but absorbing style of writing. For example, difficult concepts are often described using clear and instructive personal anecdotes. I believe it is this approach that allows the book to succeed at so many levels. In essence, Trivers argues "If I understood it this way, then so can you".

Before he became a biologist, Trivers was employed in the production of children's books and uses his experience throughout this book. It is no surprise to find the pages liberally illustrated with pictures of animals, but it is a delight to see the animals performing the behaviour sequences that are described in the adjacent text. Trivers's skills at communication are also evident in his choice of examples. Rather than provide an encyclopaedic list of case-studies, he prefers to return to the same study animals in different contexts throughout the book. The beauty of this approach is that the reader becomes familiar with the life-histories of gulls, ground squirrels and red deer, so that each new theoretical advance is illustrated by an old friend.

No textbook is perfect, and Trivers's suffers from two weaknesses. The first is that, by returning to the same relatively small set of species, some more important and instructive examples are ignored. For example, using the black-tailed prairie dog, Princeton University's John Hoogland has produced the most thoroughly worked studies of incest avoidance and alarm calling from natural populations. Yet, his work is not mentioned. My second criticism concerns Trivers's apparent gullibility. Time and again, examples are quoted to illustrate some particular theory when the data may, in fact, be interpreted in other ways (behaviour patterns of identical twins, incest avoidance, and mate choice are cases in point). However, the teacher who uses Trivers's book should be able to complement it with occasional supplementary papers and critical discussions of questionable conclusions.

Trivers's book is a unique and invaluable synthesis of our current state of knowledge about social evolution. And it goes further by providing several highly original ideas that will form the basis for future research by industrious readers.

Paul Harvey

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BOOKS

Downstart dramatists

Ibsen and Shaw
by Keith M. May
Macmillan, £25.00
ISBN 0 333 33425 6

The four outstanding European dramatists of the late 19th century – Ibsen, Strindberg, Chekhov and Shaw – all had failed fathers. What, if any, inferences can be drawn from the fact? It makes socioeconomic sense, of course: writing for the theatre was a potentially lucrative way back into the assured class position from which, by the father's bankruptcy, the son had dropped. The same was true of novel writing, witness Dickens earlier and, more dubiously, Joyce later. For all four "downstart" dramatists (Shaw's adjective) class is a key issue in the plays and they submit the social status quo to a searching scrutiny born, perhaps, of their own *déclassement*. But in what way are the inadequacies of the real world in which the playwright grew up reflected in the creation of a theatrical other world? And what kind of compensation for the failure of the father can we detect in the son's desire to write?

Keith May takes the biographical background as the starting-point for his comparative study of Ibsen and Shaw. With Ibsen, he argues, the humiliations of childhood led to a stoical individualism, a contempt for majority opinion and a profoundly tragic cast of mind. Shaw, reacting to comparable deprivations, took the opposite direction and determined to remake both himself and the world in which he was nobody. Such, according to May, were the origins of Shaw's evolutionary optimism, his belief that man was a creature capable of transcending nature. It is an interesting argument, though as so often with such biographical interpretations, difficult to substantiate. There is only rather sketchy evidence of Ibsen's childhood experience and May is sometimes forced to the circular procedure of using the plays to back up conjectures about the early life and then reading the biographical conjectures back into the plays. Shaw, on the other hand, wrote a considerable amount about his early years but his testimony needs to be treated with double caution – he had a very bad memory and may have had internal reasons for misremembering.

However the main thrust of his book is towards critical rather than biographical interpretation. What it amounts to is a contrast between Ibsen's tragic drama and the world-view underlying it (which May admires) and Shaw's relentlessly meliorist comic vision (which, with all due respect, he considers misguided). It is helpful and illuminating to see the two playwrights thus polarized, to recognize how inescapably tragic Ibsen's characteristic dramatic situations are and how little Shaw could tolerate the idea of inescapable tragedy. The book, however, is limited by trying to include too much and by the homiletic purposes of the author. The consideration, one after another, of all 26 of Ibsen's plays and some 16 of Shaw's, each with a plot summary, necessarily makes for perfunctory analysis and monotonous reading at times, even though the critical judgements may be perfectly sound.

At a broader level what is unsatisfactory about May's approach is the sense that Ibsen and Shaw are ultimately subordinated to what they represent ideologically. The strength of Ibsen's dramas, the weakness of Shaw's, are measured against a view of the human condition which May establishes as his own in passages of rhetorical philosophizing. His conclusion is a sermon on the ills of the 20th century in which we have lost the tragic vision of an Ibsen: One is inclined to wince away from such missionary zeal and wish that May had concentrated instead on the very fruitful comparison of Ibsen and Shaw for and in themselves.

Nicholas Grene

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The Nobel Prize winning novelist William Golding is the author of a travel book just published by Faber at £12.95. *An Egyptian Journal* traces the journey he took with his wife along the Nile. This photograph, reproduced in the book, is by J. Allan Cash.

As kill a king?

Hamlet, Prince of Denmark
edited by Philip Edwards
Cambridge University Press, £15.00 and £3.50
ISBN 0 521 22151 X and 29366 9

Editing *Hamlet* is a daunting task at the best of times. Professor Edwards needs to be commended for requiring only 71 pages to introduce Shakespeare's longest work and the most problematic play ever written" (Harry Levin). His deft handling of the sources is as assured as his earlier writings on Elizabethan revenge tragedy. But the test of any edition of *Hamlet* must come in the treatment of the text. The *Hamlet* that we all know from standard editions derives from an eclectic conflation of Quarto 2 (1603/4) and Folio (1623), with the additional complications provided by the intriguing "bad" Quarto 1. Edwards's *Hamlet* is no exception.

Edwards's textual approach is summed up in his bold assertion that "if the prince were not so mercurial the text would be more stable". The marriage of text and protagonist owes something, I suspect, to the contemporary debate about the status of the *King Lear* texts which Edwards himself has linked to the problems in *Hamlet* (*TLS*, 9 March 1984). Unlike Dover Wilson in his pioneering essays on *Hamlet*, Edwards retains a nostalgic longing for the authority of the shorter source text, the Folio version. But the reader need not worry about losing any of Shakespeare's lines, since the editor's composite text retains all the lines unique to either source.

The text on the page in this new edition is distinguished by Professor Edwards's subtle sense of rhythm and pointing, reflected in his use of punctuation. The quality of the footnotes is more varied. That a major new text of *Hamlet* comes with unacceptable footnotes at all is a credit to the editor. His comments on "solid" (I.2.129) and "incestuous" (I.2.157), and his explanatory gloss on the retention of "the dear murder-d" (II.2.536) are models of intelligent and succinct annotation. Only occasionally does one feel that a note is either misjudged (as in the gloss on "hobby-horse" at III.2.119-20 and in the long discussion of the dumbshow immediately following) or curiously strained, as in the brief comments on "loose" (II.2.160), "country matters" (III.2.103), or "grosser name" (IV.7.170).

My single major reservation about the annotations concerns the cluster of notes on Gertrude. For Professor Edwards the ghost's harangue ("Ay, that incestuous, that adulterate beast" . . . I.5.42-91) indicates "unmistakably" that Claudius and Gertrude "had sexual relations before King Hamlet's death". But the suggestion that Gertrude was both adulterous and accessory before the fact in the murder of old Hamlet is highly questionable. Commenting on Hamlet's "As kill a king . . ." (III.4.30) Professor Edwards himself is surprised by the "extraordinary" fact that neither Gertrude nor Hamlet "takes up this all-important matter again". Annotating Hamlet's accusation "Such an act . . ." (III.4.40) Edwards virtually concedes that the text provides no corroborative evidence for Hamlet's charges against his mother.

The reading list appended to this edition is shrewdly selective, but it ought to be brought up to date. There is little doubt, however, that this attractively produced, modernized *Hamlet* will become a popular student edition.

René Weis

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Behind the myths

Shakespeare and Others
by S. Schoenbaum
Scolar Press, £25.00
ISBN 0 85967 691 9

"What we know about Shakespeare the man belongs almost entirely to the public record of formal occasions," writes Professor Schoenbaum. We know about his christening and his burial, the marriage of his daughters and the death of his children; his considerable dealings in land and property in Stratford and London, his occasional law-suits and his will; but we have none of those "intimate revelations which only letters, diaries and the like can furnish". Nor are there dependable accounts of him by his contemporaries.

Perhaps most of us would not want it otherwise; if we knew Shakespeare the man as intimately as we know Yeats or Wordsworth or Joyce, the range of our interpretations and the ability to indulge in our hobby horses would be drastically curtailed; and the academic industry in Shakespeare would suffer a recession. In the absence of real knowledge, the vacuum has been filled by the happy proliferation of myths, as Schoenbaum demonstrates. Conjectures have become accepted as facts; documents and letters have been faked, such as the Ireland forgeries at the end of the 18th century; for two hundred years there have been passionate and most unscholarly debates among scholars about the identity of the Dark Lady, of which Schoenbaum gives a very entertaining account. Above all, there has been the great tide of bardolatry from Dryden onwards which makes it so difficult ever to see Shakespeare plain.

Schoenbaum is the biographer of Shakespeare par excellence for our generation, and this collection of essays is in part the spin-off from his earlier and more systematic biographical studies. He has made it his business to try to reach to the man behind the myth; and the account of his quest is almost an autobiography of the biographer. He describes rather movingly the "quasi-mystical experience" by Shakespeare's tomb in the church at Stratford which set him on his course; and we can follow his dedicated and strenuous pursuit of information about anyone in any way connected with Shakespeare, in the hope that some new fact about the poet might emerge. In this way we learn about the notorious William Butt who owned New Place at Stratford a few years before Shakespeare bought it, and who murdered his own daughter for gain. A subsequent owner, the one immediately preceding Shakespeare, was hanged for murdering his father, so that Shakespeare invested in a property with curious antecedents. We learn, too, of the scandal of Thomas Quiney, the husband of Shakespeare's daughter, Judith, which was hushed up a month before Shakespeare's death as a result of which he secretly changed his will.

In the process of turning up such details Schoenbaum has demolished many myths. He debunks, for example, the traditional belief in the friendship between Shakespeare and Ben Jonson and he questions whether the latter's duels of wit at the Mermaid Tavern ever took place. He sees Shakespeare's bequest to his wife of the second best bed in the light of contemporary legal practice, and denies that it indicates a loveless marriage. The fact that Schoenbaum researches into Shakespeare's life necessarily limited to this social background inevitably conditions his attitude to the plays, and makes him emphasize the basis in the everyday external reality of the times rather than in the inner recesses of the poet's mind. Thus the plot of *Lear*, Macbeth, Othello, and Hamlet on an universal family situations – Schoenbaum calls "the final cheese of life"; and the historical plays draw their unique strength from Shakespeare's observation of how politicians behave. He was a "political realist", not a theoretician; and the doctrine of the king's two bodies meant less to him than what he left out of hand from the many glimpses of life at the Court which his position as the Queen's Men gave him.

Material of this kind forms the centre of this book, but Schoenbaum fills it out very entertainingly with critical reviews, accounts of the Stratford season and reminiscences of academic conferences all over the world, all treated with tart yet affectionate interest in the labours of others in the same academic field. He also includes reassessments of dramatists to whom Shakespeare was considered inferior, notably Ben Jonson upon whose comedy rather than his didacticism he places a very welcome emphasis. His account of Middleton's *A Chaste Maid in Cheapside* is one of the most stimulating analyses of a Jacobean comedy that I know: his warning against the uncritical use of the term "decadence" in relation to Ford and the Jacobean theatre is convincing, and still necessary.

Professor Schoenbaum is a major Shakespeare scholar who casts a cold eye on the slackness or inaccuracy in scholarship, but the mind he brings to his material is in no way a cold one. He has wide wit, enormously entertaining enthusiasms above all a very personal love of Shakespeare which the personality of the writer colours the treatment and the style throughout. This may in part result from the fact that most of the chapters were originally given as conference papers; and the need to carry an audience with him has helped to produce a most readable piece of work.

Maurice Evans

Maurice Evans was formerly professor of English at the University of Essex.

A case for Chuzzlewit

Martin Chuzzlewit
by Sylvère Monod
Allen & Unwin, £18.00
ISBN 0 04 800028 0

Virginia Woolf once observed that Dickens made his novels "blaze up", not by tightening the plot, but by "throwing another handful of characters upon the fire". It is a brilliantly unfair remark. Brilliant, because it memorably identifies that facility of the imagination which enabled Dickens to create a unique range and variety of characters, many of whom have become firmly embedded within English culture; unfair, because it gives the impression of an overall lack of artistic control, an impression which undermines Dickens's phenomenal achievement and casts doubt upon his abilities as a writer.

Sylvère Monod was one of the first to dispel this image of Dickens as a negligible craftsman. Ever since Hachette published his *Dickens Romancier* in 1953 (revised and translated by the author as *Dickens the Novelist*), Monod's main preoccupation has been to show that Dickens was a conscious creative artist. This he has done not only by careful analyses of the structure of Dickens's novels, but also by an extensive and extended study of the novelist's manuscripts, working notes and corrected proofs.

In this new volume in the Unwin Critical Library (the first on a Dickens text), Monod offers a full critical discussion of *Martin Chuzzlewit*, setting out to prove it a "deliberate and coherent" work, if not one of Dickens's masterpieces. This is no easy task, since *Martin Chuzzlewit* is notoriously unfocused and inconsistent – two at least of Dickens's most delightful creations: Mrs Gamp the drunken midwife, and the hypocritical Pecksniff. It's a harsh critic who can resist either the former's curious locutions, which have us proceeding through "this Pilliam's Profiss of a mortal wafe" or which remind us that "Rich folks are to camels, but it ain't so easy for 'em to see out of a camel's eye"; or the latter's sublimely sham religion, which confers a special blessing on his own endeavours as an architect while commending those with nothing to eat to the care of Providence.

But if any of Dickens's novels would seem to bear out Mrs Woolf's judgement, it is *Martin Chuzzlewit*. And scholars (including Monod) have provided support for this by showing us that, for example, the eight chapters in which Dickens takes his eponymous hero to America were introduced after the novel had already begun publication in serial form, in an attempt to force it out of the rut of moderate success into which it had fallen, and cash in on the popular interest in anti-American satire already aroused by numerous books, including Dickens's own preceding *American Notes*. Dickens blatantly reworked (for the second time) material gathered on a trip to the United States by sending Martin Chuzzlewit across the Atlantic to experience the familiar disillusion with the great Republic he himself had undergone; the result was some new and lively characters, but also a failure to incorporate them convincingly into a story plainly about native English vices – largely, but not exclusively, selfishness and self-deception.

Monod does not really address this fundamental problem of hurried planning and arbitrary development in the novel. Yet, rather surprisingly in a book designed for relative newcomers to *Martin Chuzzlewit* (there is a good deal of plot summary and simple critical exposition), he does devote two whole chapters to textual variations and "additional material". More consistently helpful and persuasive are his chapters on Dickens's characters, themes and, especially, his "style and method" in the novel. Since Professor Monod is French, he has a refreshingly European view, roping in Hippolyte Taine, Gide and Alain for support, and calling the promisingly mature Mrs Lupin "*what French calls plantureuse*"; but it is also a fairly traditional view, ignoring the radical rewriting of novel criticism generated in recent years by his countrymen Barthes, Genette and Macherey.

Dennis Walder

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BOOKS

Striking a balance

Order and Artifice in Hume's Political Philosophy
by Frederick G. Whelan
Princeton University Press, £37.70
ISBN 0 691 06617 5

We have had in recent years a number of excellent books on the moral and political philosophy of David Hume: Duncan Forbes, Jonathan Harrison, John Mackie, and David Miller have all added generously to our understanding of the richness and subtlety of the *Treatise of Human Nature*, the *Enquiry Concerning the Principles of Morals* and Hume's innumerable essays on politics, criticism and history. Why does Hume's "curiosity to be acquainted with the principles of moral good and evil, and the nature and foundation of government" excite so much attention these days? One reason, surely, is that Hume produced what we may recognize as genuine political *philosophy* – not just a theory of politics, but the great concerns of human society studied rigorously from the perspective of epistemology – that is, on the basis of a systematic inquiry into what men and women can know about the questions they ask themselves.

Fredrick Whelan's new book is a tribute to this philosophical unity in Hume's work. Its theme is the philosopher's famous "mitigated scepticism": the balance Hume achieved, in morals as in the logic of science, between the "philosophical melancholy" of the sceptic's study, where reason can find "nothing but doubt and ignorance", and his respect for the habits, customs, and "establish'd opinions" of the crowd which alone make human society possible. Focusing mainly on the *Treatise* but drawing expertly on every scrap of Hume's writing where necessary, it demonstrates the tension and philosophical power in a theory that combines an awareness of the limits of reason with the deepest insight into the psychology of human solidarity.

John Stuart Mill recorded the opinion that Hume was "the profoundest negative thinker upon record" and argued that his scepticism drove him to "Toryism" in practice: "For if no faith can be had in the operations of the human intellect and one side of every question is about as likely as another to be true, a man will commonly be inclined to prefer that order of things which being no more wrong than any other, he has hitherto found compatible with his private comforts." Whelan upholds the interpretation of Hume as a conservative (though not a Tory – Hume himself said he was "a Whig, but a very sceptical one") and shows the distance between him and modern liberalism. But he rejects the verdict that Hume's conservatism is merely the reflex of his scepticism. He argues that on Hume's account there was not a *choice* to be made between the Pyrrhonism of the study and comforts of the salon, but a balance to be struck between them. Hume saw a role for the philosopher in the identification of the most useful of those tendencies in the human imagination which defied the sceptical assault and in their discipline by firm rules of science, understanding and practice.

Whelan shows that the naturalism of the psychology of associaton, for example, was at the same time normative, providing the scientist with guidance to choose the best standards of reasoning and judgement. His interpretation goes on to place considerable emphasis (perhaps just a little more than the texts will bear) on a connection between the natural expectation that the future will resemble the past and the human tendency in practical affairs to contrive an analogous uniformity through artifice and rules. Just as the former tendency must be disciplined by a normative philosophy of science, so the latter must be educated and protected from contrary impulses in human nature – the restlessness of the imagination, the threat that the natural virtues pose to the artifical, and the ineliminable tendencies of radical reason and disruptive utopianism in human affairs. Moreover the Humean scepticism itself retained a normative bite, not only in his view that religious superstition was not even socially useful let alone intellectually respectable (no Toryism there!), but also in the caution and "scrupulous hesitation" with which he approached claims in politics and philosophy to comprehend the nature of things.

All this is set in the context of an exhaustive exposition of the full scope of Hume's "science of man". It is studded too with unexpected gems: a contrast between Hume and Locke on the pragmatics of the understanding; an account of the *social* constitution of the Humean self; some critical remarks on Hume's introspective methodology and the assumption of human uniformity that presupposes; a brief but telling critique of one common modern interpretation that Hume's conservatism takes existent institutions as simply salient solutions to coordination games; and a helpful account of the way in which Hume's principle of utility differs from what Whelan calls the "formulaic" versions of that doctrine with which we are more familiar.

With these assets, and with no obvious drawbacks except the price that will be charged for it, Whelan's book should take its place among the very best guides that we have to the unity of Hume's thought.

Jeremy Waldron

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Loose ethical connection

The Spinozistic Ethics of Bertrand Russell
by Kenneth Blackwell
Allen & Unwin, £20.00
ISBN 0 04 190008 1

Although Bertrand Russell applied his formidable powers to a wide range of philosophical issues, he is not normally thought of as having made much of a contribution to ethics. For the most part he was highly sceptical about the possibility of ethical knowledge, and at one stage he proposed that value judgements should be excluded entirely from philosophy.

Russell's predominant view of the status of ethical judgements was based on a radical subjectivism with which he was uncomfortable (finding it hard to accept that "all that is wrong with wanton cruelty is that I do not like it"), but which he found it impossible to refute. In his *History of Western Philosophy* he observed that when we are assessing a work on ethics, the only question we can raise (apart from issues of internal consistency) is "does it give answers to ethical problems that are consonant to our own feelings?" If the answer is in the negative, Russell goes on, "we have no right to say that [the writer] is mistaken; we have only the right to say that we do not like him".

Despite this official scepticism about the status of ethics, Russell was given to making frequent pronouncements on how life should be lived. In *The Conquest of Happiness* he wrote that his own increasing sense of contentment was "very largely due" to a decreasing preoccupation with himself. That the key to happiness lies in transcending the narrow concerns of the self is a recurring theme in Russell's popular writings. In that "large, impartial contemplation of the universe as a whole" he remarked in *An Outline of Philosophy*, "we obtain something of the joy which the mystic experiences in harmony with the will of God".

As one may gather from its title, the aim of Kenneth Blackwell's study is to show that it was from Spinoza that Russell's ethical ideals were derived; in particular, it is claimed that Russell's adherence to the goal of "impersonal self-enlargement" was inspired by Spinoza. As Blackwell sees it, the key to Spinoza's influence lies in his notion of *amor intellectualis Dei*, the pure intellectual love of God which Spinoza claims will necessarily spring from the highest grade of knowledge. Blackwell maintains that the philosopher's joy in impartially contemplating the universe, as described by Russell, is "the same as that of [*sic*] Spinoza's experiencing the intellectual love of God".

But *is* it the same? Since Russell regarded Spinoza's metaphysics as "completely wrong from beginning to end", one wonders how close the parallel can really be. What seems true is that Russell was attracted by the kind of philosophic calm which Spinoza advocated – freedom from irrationality and the tyranny of the desires – and believed (reasonably) that one might pursue this quite independently of the lumber of Spinoza's metaphysics.

In his zeal for demonstrating Spinoza's influence, Dr Blackwell (who has, since its inception, been in charge of the Bertrand Russell archive at McMaster University, Ontario) seems determined to omit no possible reference to Spinoza, however slight, in Russell's writings. His sources range from the correspondence with Lady Ottoline Morrell ("I loved reading the Spinoza with you" – August 1911) to a radio discussion of 1941 ("I like Spinoza's definitions of the emotions – they are interesting"). Even for the opening years of the century which Blackwell glumly admits to be "relatively barren years for references to Spinoza in Russell's published writings", the author has managed to dig out an unsigned review which contains qualified approval for some of the doctrines of the *Ethics*. But despite the devoted diligence with which it is marshalled, Blackwell's evidence does not seem to establish anything more than the thin thesis of a loose general affinity between the two philosophers on the question of how to lead a worthwhile life.

The book's final chapter offers a critical evaluation of the "Spinozistic Ethic". There are some interesting questions to be raised here – for example whether the goal of impartial contemplation threatens those close ties of affection which are essential to human fulfilment. Unfortunately Blackwell's critique, based on "five criteria supplied by Russell himself plus nine additional criteria", is too brusque and schematic to be philosophically satisfying. Those who are interested in Russell's complex personality and his passionate recipes for personal salvation will, however, find plenty to ponder on in the material which is assembled in this volume.

John Cottingham

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Making a person

John Locke: an Introduction
by John Yolton
Blackwell, £17.50 and £5.95
ISBN 0 631 13376 3 and 14062 X

Publishers increasingly claim too much for their books. Quite off its own hat the dust-jacket of this one over-hastily refers to "this definitive introduction". Its claim is misleading too. The book could only serve as a supplement to other reading; if someone read only one thing on Locke it should not be this. Though good, though written in a clear introductory manner, its balance and content do not mark it out for its hoped-for role.

The use made of Locke's recently published correspondence in the introductory sketch of his character is skilfully done and very interesting in itself. But even supposing the stated aim of the book is not at risk by a whole one tenth of it being taken up in this way the internal balance of the sketch is odd. The vignettes concerning the contents of Locke's mysterious red trunk (were they papers on medicine or a draft of the *Two Treatises of Government*?) and the ownership of Locke's portrait (did he or did he not give it to Shaftesbury's secretary?) are too detailed and long for their point.

After this delineation of Locke the person the main task Yolton then sets himself is to build up a picture of Locke's concept of the person – a concept which he finds at the centre of Locke's philosophical, political, educational, moral, and religious beliefs. As Yolton shows, one certainly can derive from what Locke wrote on all these diverse topics a detailed cohesive view of how, given the right educational influences, a new-born human organism with passions and character traits develops morally, religiously, and intellectually into a reasonable, responsible, reflecting person. In itself the enterprise is quite evidently sensible and not misconceived; Yolton's execution of it is well worth reading; and it does enable him to range over most of Locke's writings. But those not acquainted with Locke are being invited to think that this concept was somehow consciously his abidingly central concern.

The oddness of this as a route into Locke's thought is marked from the outset by the opening discussion of his views on personal identity in Book 2, chapter 27 of the *Essay*: the chapter was added to the second edition at the suggestion of William Molyneux, and beginning with it must give a misleading sense of what Locke's great masterpiece is about. Perhaps, paradoxically, this matters little; for some virgin minds will anyway soon form the belief, which even the book's closing sections may not dispel, that *Some Thoughts concerning Education* rank in importance with *An Essay concerning Human Understanding*.

The quite justifiable claim of the dust-jacket that Yolton is "the world's leading authority" on Locke is underscored by the facts that four of the nine books mentioned in the bibliography of further reading are his and that the only article to which footnotes refer for further discussion of any point is one by his wife and himself. The newcomer's attention might, nevertheless, have been usefully drawn to other than avowedly "specialised books" and an article on 18th-century Portuguese reactions to Locke's suggestion of thinking matter.

R. S. Woolhouse

Dr Woolhouse is reader in philosophy at the University of York.

"The Young Schoolmistress" by F. B. S. Chardin (*circa* 1740) taken from a new addition to the Cambridge Introduction to the History of Art, Stephen Jones's volume *The Eighteenth Century*. (Cambridge University Press, £8.95 and £4.50.).

Fallible knowledge

Popper and the Human Sciences
edited by Gregory Currie and Alan Musgrave
Martinus Nijhoff, £29.25
ISBN 90 247 2998 X

In contemporary British philosophy the philosophy of science is a marginal activity. And yet the philosopher most influential in Britain, influential that is outside the narrow and narrowing circles of academic philosophy, is a philosopher of science. Sir Karl Popper is, you might say, the establishment philosopher. Among his many followers in science and in bureaucratic life, knighthoods abound and there is even a smattering of Nobel prizes.

But Popper's is, at first sight, a revolutionary philosophy. "Criticism" is its central talismanic word. We cannot, Popper says, know the future or even most of the present. At best we know what we know only *fallibly*. Popper is an empiricist of sorts. There is an empirical base against which to test theories. But it is shifting and unsolid and itself open to criticism. In the face of this the only rational course is conjecturing and falsifying and criticizing theories, but never verifying them. This is Popper's story about science: unlike myth-making and metaphysics, science gives due emphasis to a falsifying methodology.

The full fury of criticism demands an open society. And so Popper's philosophy of science and a liberal conception of society go hand in hand. Alan Ryan, in his contribution to this book of essays, goes further: "it is not so much that his philosophy of science supports his liberalism as that it *expresses* it".

Liberalism and falsificationism have been the constant elements in Popper's work from his time as a Viennese schoolmaster to his current position of eminence. Other aspects of his philosophy have changed. Popper has softened towards metaphysics over the years; his liberalism has become more of the right than of the left. He has developed some odd ideas in the philosophy of the mind and odder ideas about there really being a "third world" inhabited by objective problems, theories, conjectures and the like.

Clarity, simplicity and breadth, and perhaps some shallowness, are also consistent features of his work, unlike that of his fellow Austrian former schoolmaster, Ludwig Wittgenstein. Perhaps Popper has influenced philosophers of science, as on the whole he has not influenced philosophers of non-science, as much because of his philosophic vices as because of his considerable virtues, vices and virtues he shared (apart from breadth) with his early symbiotic opponents in the Vienna Circle.

The essays in this collection are contributions by philosophers who are mostly un-Popperian and they mostly fall under the subject area of the volume's title. Apart from Jonathan Cohen's demolition of the third world they deal with Popper's dualism in the philosophy of mind, his individualism in the philosophy of social science, his anti-Freudianism, his anti-Marxism, his anti-historicism.

The non-specialist will find the less technical essays, those by Alan Ryan on Popper's liberalism, by W. A. Suchting on Popper's Marx and by Richard Kraut on Popper's Socrates, readable and enlightening, but this is a book for the student and the professional more than for the general reader. The essays are of uniformly high quality. There is an especially good essay by David Papineau on the tension between Popper's reducing social facts to facts about individuals and his rejection of reducing mental facts to facts about brains.

Peter Gibbins

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BOOKS

Never puppets

Le Royaume du Laos 1949–1965
by Jean Deuve
Paris: École Française d'Extrême Orient/Adrien Maisonneuve, Ffr 170
ISBN 2 85539 739 1

Laos is a small, mountainous, undeveloped country, with the area of the United Kingdom and a racially disparate population of two to three million. Landlocked in the hinterland of Vietnam and Thailand, it was ruled until 1949 as a backwater of the French Indochinese empire which the Vietnamese dominated. Independence in 1949 "within the French community" meant, above all, independence from Vietnam, the hated traditional enemy. But the Vietnamese had always had their eyes on Laos (as on Cambodia) and they at once began to sap away in the communist manner, using a minority of disaffected Laotians who identified Vietnamese interests with their own.

The French Indo-China war was meanwhile being fought and lost. The 1954 Geneva agreement which ended it cast Laos for the role of neutral buffer between Vietnam and Thailand, always bitter enemies but now lined up on opposite sides in the cold war. In the event neither the Americans nor the Vietnamese could keep their fingers out of Laos: there resulted the brief Laotian civil war of 1960–61 which ended in another effort at neutralization by international conference in 1962. It was too late. Laos, used by both sides in the United States' Vietnam War, passed under the Vietnamese jackboot when the war was lost in 1975, its élite dispersed, its king, who had seen it all coming and refused to leave his people, "allowed to die".

Few of the many books written about Indo-China in the sixties and seventies were concerned with Laos, and the authors even of those few saw the country through foreign eyes, as a somewhat unmanoeuvrable piece in the international power game. Here, at last, is the recent history told from the inside, by Jean Deuve, a man who went to Laos as part of the Special Forces in 1945 and stayed there, on the inside track of political affairs, until 1964. The story is well told, the rivalries and intrigues of competing Laotian clans related, political changes well chronicled, events which have puzzled foreign observers explained: the documentation – with 11 maps, 62 pages of original documents and 38 of biographies – is unique. It is a book for the Indo-China specialist, for the few foreigners who have lived in Laos, for the Thais and for the Laotians themselves, who have never been shown their history in this intimate way.

There are of course wider implications. Piece in an international power game Laos may have been, but with the exception of the Vietnamese who operated from within, no foreign power diverted the deep national undercurrents that moved it or mastered the strong personalities who ruled. It may be thought, says the author, that the Laotian had no influence on the flow of events and on the fate of his country. In fact the great powers, latterly the Americans, were forced again and again to react to actions taken by Laotians in Laotian party or personal interests, against American "advice":

> The Laotians have not been merely witnesses of or passive playthings in a history made by others. . .They have been active participants, never puppets.

Even when collaboration between the Laotian right-wing government and the Americans was at its height – from 1960 onwards – the Americans could never prevent the leadership from implementing its own ideas, playing the Americans off against the Thais, for example, as was done in 1962.

Nor were the Americans alone in their frustration. I shall never forget the bewilderment of Russian instructors, chance-met in Northern Laos in 1962, who – at a much lower level – "can't do anything with these people". Perhaps the verdict must be, as we look back on Vietnam, Cambodia, Laos, even Iran that, however benevolently inclined, nobody ever can if that means forcing alien goals and values onto those who have their own.

Jean Deuve ends his story in 1965, the year in which all hope of a domestic solution in Laos was lost, and in which the Vietnam War began to affect it directly. He is to be congratulated on a meticulous, thought-provoking book, of particular relevance to the revived debate in the United States about the Vietnam War as a whole, for serious American military involvement in Vietnam had roots in the Laotian civil war of 1960–61.

Hugh Toye

Dr Toye is the author of "Laos: buffer state or battleground" (1971).

Minor incidents

How Pol Pot Came to Power
by Ben Kiernan
Verso, £30.00 and £9.95
ISBN 0 86091 097 0 and 805 X

The second national congress of the Indochinese Communist Party (ICP), meeting in 1951, decided to dissolve that multi-state body and to replace it with three national parties for Vietnam, Laos, and Cambodia respectively. It reasoned that everybody knew the ICP was run exclusively by Vietnamese and that many Laotian and Cambodian nationalists, who might otherwise be participants in the resistance struggle, were dissuaded from joining by their reluctance to serve under Vietnamese leadership. Congress documents record Vietnamese belief that neither Laotians nor Cambodians were capable of comprehending Marxism/Leninism. They also chronicle the decision to send delegations of the Vietnamese party to the two other countries to oversee the running of the national parties. These same documents elsewhere record Vietnam's intention, once the struggle had been won, of creating an Indochinese Federation and a single communist party.

Following the victories of 1975 Laos immediately became a Vietnamese satellite, according to plan, but Cambodia did not. Instead she was governed by a communist regime led by the mysterious figure of Pol Pot, about whom virtually nothing was known. She was extremely hostile to Vietnam and soon began to mount armed attacks on Vietnamese territory. In December 1978 Vietnam attacked Cambodia, overthrew Pol Pot, the Khmer Rouge regime, and installed a puppet Cambodian regime made up of large part of former Khmer Rouge members who had fallen foul of Pol Pot and fled to Vietnam for safety. In this book the young Australian scholar Ben Kiernan attempts to disentangle the convoluted history of Cambodian communism since the 1930s and to explain how Pol Pot became leader of Cambodia and how he escaped from Vietnamese hegemony in 1975.

This is a weighty, scholarly book for specialists; more general readers will soon find themselves floundering helplessly in a welter of unfamiliar names and minor incidents. Documentary sources for the book's subject scarcely exist, so the author necessarily relies very heavily upon personal interviews with whatever persons he was able to meet. Again, he includes vast numbers of incidents, some very trivial indeed, presumably because it is not possible to reject any in the certain knowledge that they are not significant. One cannot but admire Dr Kiernan's persistence and industry, but they do not make for an easy book to read. He does not stand back from his subject and present readers with a broad and readily assimilable picture of development, certainly for the good reason that this cannot be done in the present state of knowledge. That raises the question of whether the subject should have been tackled at all, but he would doubtless argue that it is better to record fully what is known than to let it go by default.

The book also suffers from the author's lack of long experience in Indochina. He must, perforce, rely heavily on the Vietnamese, without whom he could not even visit Cambodia, but he clearly fell victim to their propagandist skills, accepting what they offered unquestioningly. The "Confessions" allegedly made under torture to the Khmers Rouges at Tuol Sleng were "discovered" by the Vietnamese and are thrust by them on all who visit Phnom Penh. Is he sure that all are genuine, or that they have not been edited or tampered with? The lines followed by Vietnamese he interviewed, many politically prominent like Hoang Tung, accord too perfectly with the current lines and policies of the Vietnamese Communist Party to carry complete conviction. Is he satisfied the same people would have said the same things a few years earlier? This lack of scepticism on the part of Dr Kiernan weakens what would otherwise have been a painstaking and copiously documented study.

P. J. Honey

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Hong Kong

The future of Hong Kong has over the past few years been the subject of much debate and speculation. In a recent Oxford University Press paperback, *Hong Kong: in search of a future* (£5.95), Joseph Y. S. Cheng has collected official documents and semi-official statements which record the development of negotiations between Hong Kong, Britain and China. He also includes some opinion polls and a sample of media views.

Loss of good will

The Issue of War: states, societies and the Far Eastern conflict 1941–1945
by Christopher Thorne
Hamish Hamilton, £15.00
ISBN 0 241 10239 1

Cambodia, 1980: a soldier guarding the Bayon Temple at Angkar Thom.

Professor Thorne is a leading historian and an authority on the Far East in the 20th century whose work, particularly *Allies of a Kind*, is of the quality entitled to be called "definitive". In that book he dealt with the Far Eastern War in the particular context of the American alliance with the British Commonwealth. He has now added to it, and to his subsequent study of racial aspects of the conflict, this further survey of the social impact of the war on the various societies involved – both the active contestants, Japan, China, the US, the UK and India – and those which were the objects and victims of the struggle – Burma, Malaya, Indonesia, Indo-China and Korea.

The Issue of War is a book that transcends the boundaries between disciplines, but its central focus is the impact of war on different societies, on the relations between them, whether allies, adversaries or conquerors and conquered, and the ultimate outcome of the conflict for the states, societies and international system involved. It covers initial reactions to the outbreak of the Far Eastern war, the domestic contexts and tensions of the societies affected, the contest between the Japanese, the colonial masters and the Americans for the friendship and support of the South East Asian peoples, the social changes generated or accelerated by the war and the "mood of change" which was characteristic of much of Asia, as of Europe, in the immediate aftermath.

It is perhaps surprising to recall that the immediate reaction to Pearl Harbour among most of the principal states was relief, mixed, so far as the West was concerned, with surprise. Surprise, because in the long term the Japanese attack on the United States could be perceived, even by some of the Japanese leaders themselves, as a very high-risk gamble. Relief predominated, however. For the Japanese themselves, labouring under economic and military pressures which they felt had become unendurable, there was the sense of breaking out of the trap into which they had been forced. For the British, and particularly Churchill, there was the overwhelming relief that the blow had not fallen on the British possessions alone, and that the United States had been brought perforce to active belligerency. By the same token Roosevelt and his circle were thankful that they had been spared the difficult decision as to whether to help Britain militarily in such a case. For the beleaguered Chinese, Pearl Harbour represented the acquisition of powerful allies, where before there had been none.

So far as the peoples of South East Asia itself were concerned, of course, only a small proportion were either interested or informed enough to speculate as to what the consequences of this event might be for them. But this small proportion included nationalist leaders such as Soekarno in Indonesia, Subhas Chandra Bose in India, and Aung Sang in Burma who rejoiced, especially as the Japanese tide rolled forward, that a decisive blow was being dealt to the colonialist structure. And in this they were not wrong. The damage to European prestige and self-confidence inflicted by their ignominious ejection from South East Asia was indeed to be fatal and was matched by a rise in self-confidence and assertiveness on the part of the colonial peoples.

For this was the decisive result of the conflict, which Professor Thorne spells out in two of his chapters. Tracing the competition between the Japanese and the West for the allegiance and good will of the colonial peoples, he points out that neither side in fact succeeded. The colonial powers themselves, occupied with the war in Europe, made only desultory attempts to offer the South East Asian leaders the kind of terms which might have won them over. The persistence of out-dated colonial attitudes combined with popular ignorance and indifference to bring this about. It was left to the Americans, confident in their superior morality, to make the most persistent propaganda effort; but their appeal to many Asians was fatally compromised by their overt materialism and their ambivalent attitude to race and power politics. The Americans, like the Japanese, were confident in the superiority of their way of life, but its appeal was not as self-evident as they assumed. Indeed the most powerful forces in the new Asia which was being created – nationalism, communism and the two great religions, Buddhism and Islam, – all found much to dislike in "Americanism". All the more so because the treatment of the American negro on the one hand and on the other hand the naked pursuit of US strategic interests in the Pacific – often at the expence of allies – cast doubt on the sincerity of the US commitment to the principles of racial equality and self-determination.

Nor were the Japanese much more successful. Promises of independence after the war were not sufficient to offset Japanese heavy-handedness and military and economic exploitation. If Japan had won, much of South East Asia no doubt would have had to accept, with different degrees of autonomy, a place in a system under Japanese hegemony. As it was, the Japanese were driven out, but had already helped to set in motion, during their occupation, forces which made the permanent restoration of the pre-war colonial regimes impossible.

For the rest, Professor Thorne touches on some of the [illegible] between the western allies which were discussed in *Allies of a Kind* but is mainly concerned with the effects on the various societies of such factors as conquest and occupation, the cutting off of markets, the displacement of populations and conscription for both military and industrial purposes. In some cases, too, the stimulus given to the pace of industrialization was an important factor adding to the pace of social change, affecting such diverse elements as the strength of organized labour and the position of women.

This is not an easy book to read. The diverse strands of the author's argument cross and re-cross, making the neat coherence and clarity of his other books less easy to attain. But it is a book that successfully adds a social dimension to Professor Thorne's previous studies of the Far Eastern War.

Keith Sainsbury

Keith Sainsbury [illegible]

BOOKS

Lovell's tenacity

The Jodrell Bank Telescopes
by Bernard Lovell
Oxford University Press, £15.00
ISBN 0 19 858 178 5

In the history of science after World War II in western Europe and the United States, there are two central themes: first, the remarkable growth in government support for the scientific enterprise; and second, the desire of scientists to retain as much authority as possible over the direction of research. Not surprisingly, the politicians and bureaucrats who have dispensed to scientists such large amounts of taxpayers' money have also wanted to ensure strong measures of control on their investments. There have thus been tensions, sometimes barely noticeable and on occasion highly charged indeed, between the scientists and their patrons. And one science that has flourished in large part because of the availability of government support has been radio astronomy.

Before the early 1930s astronomers secured almost all of their information from the optical region of the electromagnetic spectrum, but the detection of cosmic radio waves by Karl Jansky in 1930 extended this narrow window on the universe. Although there was little interest initially in these novel observations, the improvements in radar techniques during the War, together with the increased availability after the War of scientists and engineers trained in those techniques, made possible the birth of radio astronomy as a science.

Sir Bernard Lovell is one of the founding fathers of radio astronomy: as a scientist he learned the basic rules of science politics during World War II; and after many struggles, he made the University of Manchester a world centre for radio astronomy by establishing at Jodrell Bank in Cheshire the so-called Mark I radio telescope, essentially a steerable dish some 250 feet across designed to collect radio waves. In his book *The Jodrell Bank Telescopes*, Lovell gives a vivid description of his efforts to maintain his research group at the cutting edge of the science, which required that he gain funds for renovating existing radio telescopes as well as for the construction of new instruments.

For Lovell this was a necessary, though often extremely distasteful, quest. At one point he refers to it as "torture", for not only was it essential to gain the support of his colleagues on the scientific excellence of a proposal for a new instrument, but, as Lovell writes, "When these issues become entwined with personal jealousies and ambitions, with economics, and with national and international politics, then the difficulties of making progress become formidable". The easy option is to do nothing, a point which, he argues, pleases the Treasury: from his standpoint, its civil servants too often preferred to sit on their hands.

A related issue is that very few politicians played any sort of role at Lovell's level. Unlike, say, the funding system in the United States, where major projects are brought before several committees in Congress, Lovell's book implies that during the 1960s and 1970s the British manner of allocating funds for, and deciding priorities within, astronomy hardly engaged elected officials at all.

This book is therefore largely concerned with the strategies and tactics Lovell adopted to steer his proposed projects through the seas of political inertia and opposition; we relive with him his frustrations, disappointments and successes. The reader is thereby given a decidedly one-sided, but always absorbing, view of the kinds of tensions that exist, as well as the battles that can erupt, between scientists and their patrons. The author presupposes, however, a fair amount of prior knowledge, for the reader is dropped almost straight in the deep end of science politics with little consideration for context. For a full grasp of the early sections, you need to have read Lovell's *The Story of Jodrell Bank* and *Out of the Zenith*. Also, as the scientific rationales for the various instruments that he proposed are usually not set out in detail, we do not gain a good iden of *why* the instruments were needed. Thus, although *The Jodrell Bank Telescopes* is by no means a rounded historical account, it is nevertheless a fascinating book, written clearly and with passion. It will be of great interest to students of British science policy, as well as astronomers and historians of science and technology. Not only does it tell us much about the political process of securing government funding, but we also learn a good deal about Lovell and the qualities of leadership and tenacity needed to sustain pre-eminent research groups.

Robert W. Smith

Robert W. Smith is historian-archivist to the Space Telescope History Project, a joint enterprise of the US National Air and Space Museum, Smithsonian Institution, and Johns Hopkins University, Baltimore, Maryland.

This Samuel Coccius illustration from the *Basel Broadsheet* depicts a sighting of strange things in the sky (possibly natural atmospheric events) on August 7, 1566, from *Science and the UFOs* by Jenny Randles and Peter Warrington (Blackwell, £12.50).

Policy fabric

A Strategic Analysis of Science and Technology Policy
by Harvey A. Averch
Johns Hopkins University Press, £17.80
ISBN 0 8018 2467 2

Science policy documents are littered with metaphors from the worlds of agriculture, cooking and textiles. Science is said to be organized into fields which need to be cultivated. Harvests may be reaped only when fields are ripe. The seed corn of basic research must be preserved; it must not be consumed because of short-term exigency. Changing metaphors, the resources for science are a cake awaiting cutting, the slices to be allocated to different subjects. A key issue is how to increase the size of the cake. At the same time, science is a seamless web: damage to one part of the fabric damages the whole, so that one must support all or nothing. And so on. This is the language of advocacy. Although the examples are not his, Averch would recognize them as typical of what, with slight exaggeration, he calls the "poetic" style of science policy-makers.

Averch came to science administration after a professional grounding in the tough school of American policy analysis. The penchant of that school is for economic, statistical, systems analysis and operational research styles of analysis, presentations that are structured as lists of formal propositions, and a generally critical attitude to advocates. All this is designed to give decision-makers reasonable guarantees that the advice they propose to use has had its worst defects removed and will pass certain minimum standards of rigour.

Averch was surprised to find that policy analysis for science and technology in the United States was, and is, apparently untouched by the canons and "craft rules" which characterize mainstream policy analysis. In contrast to the doing of science, the doing of science and technology policy, he found, was casual, lacked standards for debate, and was characterized by the assembly of an ad hoc set of justifications for the subjects of the day in the hope that at least one of those justifications would "score". This he calls the "kitchen sink" mode of argument, which is at least a fair riposte to the culinary school of science policy metaphorists.

Averch argues that the analysis of science and technology policy is complicated by the decentralized nature of the enterprise and by our limited understanding of it. He suggests that we can begin to approach the subject more systematically by focusing on decisions in a few critical areas: resource allocation, technological innovation, science education, information dissemination, and advisory structures. In the event, Averch has little to say about advisory structures, although he does offer an interesting discussion of how decision-makers should judge policy advice. His focus, rather, is on the strategies which recur in the arguments of scientists, science advisory panels and national decision-makers on the other subjects in his list.

Thus, he compares the strategies which the scientific community in the United States has traditionally used to argue for more resources with the strategies used by those who control the resources. He examines the arguments over government support for civilian technology and innovation. He looks at the federal role in science education and contrasts policy for educating scientists and technologists with more general policy for promoting the scientific and technical literacy of citizens at large. He discusses United States policy concerning the dissemination and diffusion of scientific and technical information, both domestically and as an aspect of foreign policy. And he calls for improvements in the design of the policy process, such that economic and budget issues would be built into the initial structure of a policy inquiry and not encountered for the first time when the final positions of contending parties arrive on the decision-maker's desk.

Averch is ambivalent about whether science and technology policy is a more difficult subject for analysis than others: sometimes he argues that it is, but elsewhere he accepts that there are some equally difficult areas of public choice where policy analysis has flourished. What science and technology policy lacks, he suggests, is a cadre of analysts specializing in this area. Hence, it also lacks its own critical tradition, and is too easily swayed by the advocates and their metaphors. In saying this, however, he perhaps undervalues the work done by his own colleagues at the National Science Foundation. Things are changing in Britain too. But his general point about the shortage of people working on this subject seems, to this advocate, to be undeniable.

Philip Gummett

Philip Gummett is senior lecturer in the department of science and technology policy at the University of Manchester, and author of "Scientists in Whitehall" (1980).

Ada primers

Programming in Ada: a first course
by Robert G. Clark
Cambridge University Press, £22.50 and £8.95
ISBN 0 521 25728 X and 27675 6

The Ada Programming Language: a guide for programmers (second edition)
by I. C. Pyle
Prentice-Hall, £18.95
ISBN 0 13 003906 3

Many experts have criticized the Ada language for being too big. However, although there is no denying the language is big – say, about six times the size of Pascal – there are many things which are simply handled in Ada which are virtually impossible in Pascal. In designing the language for the United States Department of Defense, the team responsible attempted to make the language as small as possible while meeting the demands of the department.

One disadvantage of the size of Ada is the difficulty in teaching it to potential programmers. Although Clark's 217-page introduction to the language is intended for beginners with no computing experience, he only covers about half of the language, corresponding to a useful Pascal-like subset. He does provide, however, a lot of simple examples, all of which have been carefully checked on a validated Ada compiler. (Validation checks that the compiler functions correctly on a large number of tests – this has been a difficult hurdle for many implementations.) A problem with any Ada textbook is to present the language without too many forward references. Although such references cannot be avoided completely, because of the structure of the language itself, Clark does provide an easily flowing text.

From the book's subtitle, I take it that Clark believes that an elementary introduction to Ada is possible and a useful way to start with computing, but would such a "first course" be feasible at present? First, Ada compilers are more expensive and slower than Pascal, so that academic institutions may well stick with Pascal. Second, many more good textbooks are available for Pascal compared with Ada (although I believe that the standard of the Ada textbooks is higher). Third, preparing a new course using Ada rather than Pascal is a significant burden for lecturers. Most of these disadvantages, however, should be overcome in time, so that we can expect a general move towards Ada. The advantage of using Ada for a first course is clear – the second course can use the same programming language to teach issues, like concurrency, which would be impossible with Pascal. It is also worth bearing in mind that knowledge of Ada as opposed to Pascal is an advantage in the job market.

Professor Pyle's 340-page book covers all the language, assumes a knowledge of programming and is oriented to "real-time" computing. A good illustration of this area of application is given in the book: the control of a valve with its associated time delays and external interrupts, which involves calculating the criteria for changing the valve state. Although Ada was designed for this type of application, it is general enough to cover almost all areas currently handled by high-level languages (like Pascal). Hence, I prefer Clark's approach, of not slanting the text to a particular area of application.

Pyle's book is a disappointment. Although a lot of the errors in the first edition have been corrected, several remain. The book's structure remains unchanged, which gives rise to a large number of forward references. At more than twice the price of Clark's book, it cannot be considered a good buy. For those seeking a book on the whole of Ada, I would recommend John Barnes's *Programming in Ada* (Addison-Wesley, second edition, 1984); for those brave enough to consider using Ada for a first course, I would recommend Clark's book.

Brian Wichmann

Brian Wichmann works at the National Physical Laboratory and was a member of the Ada language design team.

Software skills

A Practical Handbook for Software Development
by N. D. Birrell and M. A. Old
Cambridge University Press, £20.00
ISBN 0 521 25462 0

Big software projects are frequently big disasters: they are late and hugely above budget; and if they work at all, they do not work very well. Similar statements could be made about big projects in almost any other sphere, and the recent record of software projects is certainly no worse than other projects of similar complexity. Nevertheless, software developers are striving to do better. As a result, the discipline called software engineering has grown rapidly during the past ten years.

The aim of that discipline is to replace the haphazard approach of the bad old days by a comprehensive set of methods, preferably formal ones, that cover all aspects of the building of software, starting when the requirements for the product are first identified and ending perhaps ten years later when, after a long "maintenance" period, the software finally expires. Software engineering methods cover both the management of people working on a project and the technical organization. The resemblance of software engineering to other branches of engineering, however, is generally only superficial, because of the very different nature of the end-product.

This book presents a survey of software engineering methods and examines how they can be used on a practical software project. Written by two practitioners who work for Logica, a company with a generally high technical reputation, it successfully brings together a host of material, taken from many different sources and covering all stages of software development. The organization of the book is excellent: a reader can readily appreciate the position of each software engineering method within the overall software development process; and for any software engineering problem, there is a range of possible solutions, authoritatively presented. There is a good bibliography for tracing further information where needed. And though not an easy read, the book is generally well written and, apart from the typography, well presented.

Given that software engineering is such a young discipline, some of the methods may be speculative, but all are at least worth evaluating. People who write small programs — anything up to 10,000 lines — can achieve success simply by flair: although such people could survive without any of the software engineering techniques presented, they would certainly benefit from reading the book. For larger software projects, however, the problem of managing the complexity soon dwarfs all other problems; and, unless the management and staff apply at least some software engineering techniques, their project will surely fail. For such people, the book will be invaluable.

In universities, really big software projects are virtually unknown. Application forms for Science and Engineering Research Council grants do indeed allow for seven figures as the project cost, but any software engineer taking advantage of this would be such a hopeless optimist that he would never succeed at software. However, although this lack of first-hand experience with really large projects is a handicap to most university software engineers, software engineering nevertheless features in most university computer science curricula. This book will be valuable to lecturers and students on such courses.

P. J. Brown

P. J. Brown is professor of computer science at the University of Kent at Canterbury, and chairman of the British Computer Society/Institute of Electrical Engineers conference "Software Engineering 86".

A collection of studies and essays in honour of Louis de Broglie, Paul Dirac and Eugene Wigner has been edited by A. O. Barut, Alwyn van der Merwe and Jean-Pierre Vigier and published by Cambridge University Press as *Quantum, Space, and Time: the quest continues* at £25.00.

The Yorkshire Sculpture Park at Bretton Hall, near Wakefield, will be showing an exhibition of work by Osip Zadkine until October 31. Illustrated is the angular bronze *The Couple* from 1966.

Chairs

Leicester Polytechnic has made three appointments to professorships: David Chiddick, head of the school of land and building studies and dean of the faculty of technology and construction, becomes the first ever professor of surveying in the polytechnic; Andrew Parkin has been appointed professor of systems analysis; the composer Gavin Bryars has been appointed professor of music.

The University of Glasgow has appointed Dr George McLeod Newlands to the chair of divinity in the department of theology and church history. Dr Newlands is at present university lecturer and fellow and dean of Trinity Hall, University of Cambridge.

The University of Edinburgh has appointed Mr Roger Stonehouse to be professor of architecture. Mr Stonehouse is at present senior lecturer in the Thames Polytechnic School of Architecture and Landscape. At the same time, Edinburgh announces the appointment of Dr David Warren, currently vice-president of engineering at Quintus Computer Systems Inc, California, to be professor of computational logic.

Promotions

Mr P. Fitzpatrick, reader in law and interdisciplinary studies, has been awarded the title of professor of law and social theory in the University of Kent at Canterbury.

EDENBURGH
Personal chairs: Dr E. B. Richards (cognitive science); Dr L. F. Prescott (clinical pharmacology); Dr G. S. Fawley (computational physics); Dr J. D. M. H. Laver (phonetics); Dr C. R. House (veterinary cell physiology); Dr J. E. Dale (plant physiology); Dr D. J. H. Brock (human genetics).

NEWCASTLE UPON TYNE
Readership: Dr T. S. J. Elliot (bacteriology).
Senior lecturerships: Mr J. Pooley (orthopaedic surgery); Dr M. A Stafford (anaesthesia).

Appointments

The Royal College of Art has announced the appointment of architect and designer Derek Walker to a professorship in architecture and design studies; Floris Van Der Broecke becomes visiting professor in the department of furniture design; Nigel Chapman becomes head of the department of transport design; Jeremy North, tutor in management studies in the department of cultural history; and Alan Selby, deputy registrar.

YORK
Lecturerships: Dr C. J. H. Elliott (biology); Dr Christopher Anastasi (chemistry); Dr Mary Morgan (economics and related studies – temporary); Rosemary Webb (education); Dr Robert Millar (education); Graham Newson (lecturer); Dr A. G. Burr (electronics); David Parrott (history); Dr John Helliwell (physics); Dr Nicholas Hammond (psychology); Margaret Ball (social policy and social work – temporary/part-time); Dr Trevor Pinch (sociology); Dr Shirley Melver (sociology - temporary).

Colin Lago, senior counsellor at the Leicester Polytechnic, has been appointed chair of the Association for Student Counselling.

Bill Jordan, reader in social studies in the department of sociology, University of Exeter, is to take up a part-time appointment as joint chairman of the research panel of the Basic Income Research Group.

Mr William Green, previously head of the school of business and professional studies at Bradford & Ilkley Community College, has been promoted to vice principal

Glasgow College of Technology has appointed Mr Alan Irons as its first college secretary from September 1, the date when the college formally becomes a Scottish Central Institution. Mr Irons is currently a principal in the Scottish Education Department with responsibility for Central Institutions.

EDINBURGH
Lecturerships: C. B. McCully (English language and literature); Diane R. Elson (economics); S. R. Heathcote (education); Dr Isobel P. Bruidman (cell biology); Dr Alison Prior (medicine); Dr P. T. Daley-Yates (pharmacy).

DURHAM
Lecturerships: Peter J. Cook (education); Dr Alan W. Craig (archaeological sciences); Dr Vernon Gibson (chemistry); Dr Jonathan Philip Lloyd (applied physics and electronics); Dr Martin Millett (Roman archaeology); Keith R. B. Morrison (education); Dr Thomas V. Parry (engineering); Dr Alan Purvis (engineering and applied science); Dr D. J. H. Brock (human genetics).

NEWCASTLE UPON TYNE
Lecturerships: Dr E. K. Cameron (history); Mr P. Carr (English language); Dr H. W. Chandler (metallurgy and engineering materials); Mr Ian Cuthbertson (economics); Mr H. Hoffmann (architecture); Mr P. J. Knibbs (architecture); Mr A. M. Koolmans (computing); Dr N. C. Norman (inorganic chemistry); Dr R. S. G. Rodger (medicine); Dr D. A. Rose (soil science); Mr I. Sayers (electrical and electronic engineering); Dr T. H. Thomas (clinical science: renal biochemistry); Dr J. M. Thomason (prosthodontics); Mr F. I. Thompson (education); Mr H. C. Yung (electrical and electronic engineering).

Publication

An international bibliography of materials on *Public Lending Right*, compiled by Linda Barnett, has just been published by Taylor Graham. The book – ISBN 0 947568 05 0 – is available, price £15, from the publishers at 500 Chesham House, 150 Regent Street, London W1R 5FA.

NOTICE BOARD

It is hoped in future to publish a calendar of forthcoming academic events – conferences, seminars, major lectures, colloquia – on the Noticeboard page. This will be done on a termly basis starting in late September. Press and information officers and other interested parties should submit copy as soon as possible for conferences etc up to December 1985.

Copy should be as brief as possible and should include title of event, sponsoring body, main speakers, a telephone number/address for inquiries and, where relevant, the closing date for applications. It would also be helpful if envelopes were provided ly marked "Events".

Regarding Grants listings on Noticeboard it should be noted that pressure on space demands that we again cut down on the number of entries listed. Already routine excluded are: repeat grants, grants for travel or solely for equipment, and grants solely for assistantships or research salaries. In addition, we will in future only be able to publish grants over £10,000 in science and technology field and over £5,000 in the humanities and arts.

Grants

KENT: Professor J. A. M. McDonnell, £49,609 from SERC (space development system and retrieval of cosmic material); Mrs H. Brown, Mr D. J. Caul and Mr S. E. Blume, £38,000 from SERC (Perq support for typesetting service with graphics); Professor J. S. R. Chisholm, £8,000 from SERC (Clifford algebras and their application in mathematical physics); Mr C. G. Pickvance, Mr I. R. Gordon and Dr P. F. Taylor-Gooby, £43,370 from SERC (restructuring the services sector in Thanet); Health Services Research Unit, £83,937 from Canterbury and Thanet Health Authority (research fellowship, research support costs and overheads); Rev Dr Kenneth Wolfe, £7,500 from IBA (religion and broadcasting).

BIRMINGHAM
Dr K. Docherty, £22,797 from West Midlands Regional Health Authority (identification of prohormone processing enzymes); Dr G. Blackledge and Dr K. A. Kelly, £11,021 from Central Birmingham Health Authority Endowment Fund (statistical methods for analysis of sequential and prognostic data from cancer studies); Professor J. R. Newton, £70,310 from Organon Laboratories Ltd. (human reproduction); Professor S. A. Tobias, £86,300 from Wolfson Foundation (improvement of piston rings by roll forming); Dr B. S. C. Leadbeater, £38,157 from NERC (choanoflagellates in turnover of organic matter in sea); Professor J. Bridgwater and Dr T. R. Bott and Dr M. B. Callow, £91,980 from SERC in association with International Paint plc and APV International Ltd (novel polymers for prevention of biofilm adhesion in process plant) plus £33,900 from International Paint plc for same project); Professor J. D. Dowell, Dr S. B. Kinson and Dr G. T. Jones, £30,100 from SERC (particle physics experiments using film analysis and electronic counter techniques); Miss P. M. Nicer and Mrs B. M. Davies, £14,961 from Institute of Housing (housing work and training needs); Mr S. R. Leach, £26,700 from Department of the Environment (political organization of local authorities); Dr M. J. McConville, Mr R. J. Legg and Mr A. H. Sanders, £53,430 from ESRC (director to charge and to prosecute); Dr J. Baldwin, £38,677 from the Leverhulme Trust (pre-trial settlement of criminal cases); Professor M. M. Clark, £20,000 from Department of Education (critical evaluation of research in education of under fives); Professor J. H. Coote, £42,187 from British Heart Foundation (role in blood pressure control of angiotensin containing nerve terminals around sympathetic preganglionic neurones); Dr E. Elias, £32,837 from Central Birmingham Health Authority (liver transplantation); Miss E. G. Black and Dr M. C. Sheppard, £11,582 from West Midlands Regional Health Authority (a new thyroid cell-line: use in measuring thyroid stimulating antibodies and in studying thyroglobulin synthesis); Dr J. A. Franklyn and Dr M. C. Sheppard (relationship of anterior pituitary hormones: action to gene transcription); Mr A. N. Emery, Professor A. W. Nienow and Dr R. Jefferis, £125,468 from SERC (optimizing monoclonal antibody production in membrane retained systems of hybridoma culture); Professor K. R. Rushton and Dr J. W. Lloyd, £59,000 from East Worcestershire Waterworks Co (Bromsgrove aquifer); Dr D. J. Creasey, Dr J. R. Carey, Dr B. V. Smith and Dr B. K. Gazey, £22,000 from Open University (underwater sensing principles and applications); Dr D. Thompson, £10,823 from Health and Safety Executive (anthropometry of hand and arm in forced reach through aperture and four barriers to provide data for use in food processing industry); Dr T. W. Roberts, £50,718 from Swiss Aluminium Ltd (damping superplastic aluminium alloy sheet); Dr S. J. W. Busby, £38,725 from SERC (activation of gene expression by cyclic amp receptor protein); Professor J. Bridgwater, Dr T. R. Bott, Dr M. B. Callow, Professor J. A. Callow and Miss A. J. Cox, £91,980 from SERC in association with International Paint plc and APV International Ltd (novel polymers for the prevention of biofilm adhesion in process plant); Professor A. S. Travis, £7,500 from City of Portsmouth (impacts on local economy of tourist investments relating to Portsmouth's naval heritage); Mr C. R. Owen, £15,000 from Centre for British Teachers Ltd (pilot study for preparation of distance learning materials).

INSTITUTE OF CHILD HEALTH, LONDON
Dr M. Baraitser and Dr R. M. Winter, £56,028 from Action Research for the Crippled Child (computer aided diagnosis of dysmorphic syndromes); Professor C. S. Peckham, £[illegible] from Child Health Research Appeal Trust (salary costs: support for epidemiological epidemiology); Professor J. Graham, £11,620 from ESRC (psychiatric and anthropological study of social child sexual abuse in Britain); Dr Hawerth, £10,154 from John Isaac Board (influence of newborn hypoxia on early lung development); Professor T. M. Barratt, £[illegible] from Kidney Research Aid Fund (research for nephrology research); Professor C. S. Peckham, £49,405 from Health Laboratory Service (medical paediatric scheme); Professor [illegible] Moody, £10,000 from Save the Children Fund (information on [illegible] disability in the Third World); Professor P. J. Graham, £88,705 from [illegible] exams Trust (difference between psychological and physical factors in [illegible] children failing to thrive).

YORK
Professor P. A. Rubtz, £[illegible] Historic Buildings and Monuments Commission (backlog project); Professor [illegible] of archaeological excavation); Dr H. C. Mytum, £11,000 for Whitwell Centre for Field Research, Belmont, Massachusetts (Work in Norfolk); Dr R. A. Wilson, £21,154 from European Economic Community (community to human blood fluke [illegible] soma mansoni); Dr D. [illegible] £62,478 from Agricultural and Food Research Council (mechanisms of regulation of sucrose transport at plasma membrane and tonoplast); [illegible] BETA vulgaris); Dr D. E. [illegible] £12,000 from Oxfam Development Education Committee (perception of consciousness project); Professor [illegible] Blundworth and Dr J. E. [illegible] £177,248 from SERC/Alvey (low rate (plasma processing of refractory metals and silicides); Mr M. J. Mc[illegible] and Dr D. van Vliet, £20,000 from SERC (interaction of legal and policies and traffic assignment); Professor P. H. Venables, £46,350 from Scottish RITE Supreme Council (USA) Schizophrenia Research Programme (children at risk for schizophrenia: longitudinal study in Manchester); Dr S. Lowe, £10,005 from [illegible] Rowntree Memorial Trust (feasibility of empty properties for low income [illegible] housing); Professor J. R. Bradley, £41,850 from Manpower Services Commission (placement services for disabled people); Professor J. R. Isherwood, £8,448 from Joseph Rowntree Memorial Trust (family budget).

Conference

BRITISH SOCIOLOGICAL ASSOCIATION THEORY GROUP CONFERENCE AT WYDDRINGTON HALL UNIVERSITY OF BIRMINGHAM THURSDAY 12TH AND FRIDAY 13TH SEPTEMBER 1985

THEME: POLITICS AND SOCIAL THEORY

SPEAKERS WILL INCLUDE:

BARRY HINDESS (Liverpool) 'Social Theory and Political Analysis'
GORAN THERBORN (Lund) 'Social Theory and the Welfare State'
CHRISTOPHER PRENDERGAST (St. Andrews) 'Marx, Democracy and the Public Sphere'
JOHN BIRD (Bristol Poly) 'Foucault, Power and Political Action'
WAYNE HUDSON (Utrecht) 'Postmodernity and Social Theory'
BOB BERKY (Hull) 'Vocabularies of the State'
PAUL HOCH (Aston) 'Politics and the Intellectuals'
IRVING VELODY (Durham) 'Socialism as a Sociological Problem'

PROGRAMME AND REGISTRATION FORMS FROM:
Peter Lassman, Department of Sociology, Faculty of Commerce and Social Science
The University of Birmingham
P.O 363, Birmingham B15 2TT

Open University viewing

Saturday August 10

BBC1
7.10 Oceanography. Evolution of sa ocean. (B334; prog 12)
7.35 Yoshkine. Time for a change. (B364; prog 13)
8.00 Philosophical Problems. The philosophy of science 1. (A313; prog 4)

BBC2
8.25 Engineering Product Design. Testing time for a product. (T363; prog 4)
8.50 World Politics. Structural Power: 1, exploitation. (D233; prog 9)
9.15 Third World Studies. Migration: the Ankara Response. (U204; prog 8)
9.40 Public Minorities and Community Relations. Colonialist in reverse: 1, When push comes to shove. (B354; prog 2)
10.05 Basic Science for Technology. Electromagnetic induction. (T281; prog 2)
10.30 Arts foundation course. Words and pictures: the art of Charlotte Brontë. (A101; prog 26)
10.55 Graphs, Networks and Design. Public Stereotypes. (M364; prog 15)
11.20 Discovering Physics. X-rays and energy levels. (S271; prog 11)
11.45 Society, Education and the State. A Woman's Place. (E333; prog 7)
12.10 An Introduction to Psychology. Here's looking at you. (D236; prog 12)
12.35 Contemporary Issues in Education. Unemployment and Cheryl. (E200, prog 20)
13.00 Biology. From swamps to coal. (S236; prog 13)
13.25 Organic Chemistry. The Polymer age. (S266; prog 13)
13.50 The Enlightenment. The Adam Smith Lecture. (A366; prog 12)
14.15 Telecommunications Systems. Colour Television. (T221; prog 13)
14.40 Language in Use. Conversation analysis. (E353; prog 7)
15.05 Curriculum Evaluation and Assessment. Levels of meaning. (E354; prog 3)
15.30 Quantum Theory and Atomic Structure. Shapes and angular momenta in atoms. (S251; prog 9)
15.55 Man's Religious Quest. Zoroastrian orthodoxy. (AD208; prog 4)
14.20* Arts foundation course. Modernism. Nicholson and Wallis at St Ives. (A101; prog 25)
14.45 Shakespeare. King Lear Workshop, 1. (A361; prog 1)

RADIO 3 (VHF)
6.30 Introduction to Calculus. A calculus of fields. (MST363; prog 7)

Sunday August 11

BBC1
6.45 Technology foundation course. Cancer: terminal care. (T101; prog 14)
7.10 Crustal and Mantle Processes. Impact cratering. (S282; prog 9)
7.35 Control of Technology. Food Cooperatives in Vermont. (T361; prog 7)
8.00 Biochemistry and Molecular Biology. Immunology: 1, overview. (S322, prog 13)
8.25 The Nature of Chemistry. Thallium in organic synthesis. (S304; prog 25)

BBC2
6.30 Urban Change and Conflict. Planning. (D202; prog 7)
7.40 Decision Making in Britain. A trunk road appraisal. (D236; prog 13)
8.05 The Changing Experience of Women. Raising sons and daughters. (U221; prog 7)
8.30 Computing and Computers. Indexed files. (M252; prog 3)
8.55 Mathematical Models and Methods. Line integrals and curl. (MST294; prog 26)
9.20 Social Sciences foundation course. Inner city story: opposing racism. (D102; prog 26)
9.46 Discovering Physics. X-rays and energy levels. (S271; prog 11)
10.10 Maths foundation course. Modelling drug therapy. (M101; prog 22)
10.35 An Introduction to Mathematics. A non-Euclidean geometry. (M205; prog 22)
11.00 Probability and Statistics. Estimation. (M243; prog 13)
11.26 Design Processes and Products. The shape of cans to come. (T263; prog 7)
11.26 Modern Art and Modernism. MOMA. Museum of Modern Art, New York. (A315; prog 27)
11.50 Biology: Form and Function. Plants: problems with water. (S202; prog 26)
12.15 Cognitive Psychology. Production systems. (D303; prog 14)
12.40 Purpose and Planning in the Curriculum. Setting our courses. (E304; prog 1)
13.05 Art in Italy, 1400–1500. Three perspectives. (A305; prog 6)
13.30 Food Production Systems. The Mumias Sugar Scheme. (T273; prog 7)

RADIO 3 (VHF)
6.35 Reading Development. Reading errors – teaching progress. (PE231; prog 7)
6.45 Man's Religious Quest. Mithraic symbolism. (AD208; prog 21)
7.00 Mathematics foundation course. Urban geology. (S101; prog 13)
7.25 Technology foundation course. Who will care for me while I'm dying. (T101; prog 14)

Monday August 12

BBC2
6.30* Basic Science for Technology. Electromagnetic induction. (T281; prog 2)
6.55* Contemporary Issues in Education. Unemployment. Cheryl. (E200; prog 20)

RADIO 3 (VHF)
6.35 Management Issues in Post Compulsory Education. The Administrators in the Institution. (E324; prog 2)

RADIO 4 (VHF)
20.30 Arts foundation course. A psychological approach to *Jane Eyre*. (A101; prog 26)
22.50 The Enlightenment. Smith and Government. (A204; prog 26)

Tuesday August 13

BBC2
6.30* Geology. From swamps to coal. (S236; prog 13)
6.55* Social Sciences foundation course. Inner city story: opposing racism. (D102; prog 26)
23.30* Discovering Physics. X-rays and energy levels. (S271; prog 11)
23.55* Man's Religious Quest. Zoroastrian orthodoxy. (AD208; prog 4)

RADIO 3 (VHF)
6.35 The 19th Century Novel and its Legacy. Tolstoy's view of art and morality. (A312; prog 13)

RADIO 4 VHF
20.30 Open Forum. Information programme for OU students.
23.55* Science foundation course. Urban geology. (S101; prog 13)

Wednesday August 14

BBC2
6.30* Technology foundation course. Cancer: terminal care. (T101; prog 14)
6.55* Arts foundation course. Words and pictures: the art of Charlotte Brontë. (A101; prog 26)
23.30* Engineering Product Design. Testing time for a product. (T363; prog 4)
23.55 Maths foundation course. Modelling drug therapy. (M101; prog 22)

RADIO 3 (VHF)
6.35 The Romantic Poets. Keats and mythology (A362; prog 10)

RADIO 4 (VHF)
23.30 Modern Art and Modernism. The Artists' International Association. (A315; prog 26)
23.50 Contemporary Issues in Education. Child liberation. (E200; prog 11)

Thursday August 15

BBC2
6.30* Maths foundation course. Modelling drug therapy. (M101; prog 22)
6.55 Science foundation course. The fabric of life. (S101; prog 25)
23.20 Weekend Outlook.
23.35* Instrumentation. Modulation and noise. (T291; prog 9)

RADIO 3 (VHF)
6.35 The Romantic Poets. Keats and mythology (A362; prog 10)

RADIO 4 (VHF)
23.30 Modern Art and Modernism. The Artists' International Association. (A315; prog 26)
23.50 Contemporary Issues in Education. Child liberation. (E200; prog 11)

Friday August 16

BBC2
6.55 Biology. Brain and Behaviour. Dominance and subordinancy. (SD286; prog 13)
7.20* Weekend Outlook.

RADIO 3 (VHF)
6.35* Open Forum. Information programme for OU students.
* repeated programme

24.00* The Changing Experiences of Women. Raising sons and daughters. (U221; prog 7)

RADIO 3 (VHF)
6.35 Technology foundation course. Who will care for me while I'm dying. (T101; prog 14)

RADIO 4 (VHF)
22.30 An Ageing Population. Progress in Age Research. (P252; prog 13)
23.50 Organic Chemistry. Feedback. (S246; prog 8)

Universities

Applications are invited for the following posts for which applications close on the dates shown. SALARIES (unless otherwise stated) are as follows: Senior Lecturer $A38,203–$A41,029; Lecturer $A28,236–$A34,467. Further details and application procedure may be obtained from The Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF unless applications are invited direct to The University. Equality of opportunity is University policy.

The University of Adelaide
LECTURER–DEPARTMENT OF TRANSPORT
(Limited Term Lecturer/Senior Lecturer)(Re-advertised)(Ref: X4056)

In the Department of Civil Engineering. The post has been established from funds provided by the South Australian Department of Transport. It provides a unique opportunity for a professional person or incumbent to work in a university and establish research links with organisations responsible for transport matters in South Australia. Applicants may have an interest in one or more of the following areas: traffic engineering, transport planning, urban traffic management or allied disciplines.

The position is available immediately for up to three years. If necessary, arrangements may be made for secondment from an applicant's own organisation. The University reserves the right to make payment at any person regarding any candidate's suitability for appointment, not to make an appointment or to appoint by invitation.

29th September 1985.

The University of New England
LECTURER IN HUMAN NUTRITION
Department of Biochemistry, Microbiology & Nutrition

The appointee should hold a postgraduate degree in the field of human nutrition and preferably a qualification in dietics as well. The appointee will be expected to teach and develop courses in human nutrition, to supervise honours and postgraduate students and carry out research.

The Department is well equipped for research in number of areas, including whole body calorimetry and energy metabolism of man.

Informal enquiries to Associate Professor R. J. Cousins (067) 73-2510 or ISD (61 67 73-2510)

The appointment will be to the permanent staff of the University reserves the right to make the appointment probationary where it considers this appropriate.

Other conditions include superannuation, assistance with travel and removal expenses and with buying or building a house in Armidale.

Applications including the names and addresses of three referees and quoting the position number 517, should be sent to the Staff Officer, University of New England, Armidale, N.S.W. 2351, Australia, prior to the closing date. Applicants should forward a copy of this advertisement to their referees and ask them to send their reports direct to the Staff Officer, Mr B. G. Turner, marking their envelopes 'Private and Confidential' and quoting the position number, before the closing date so as to expedite the appointment process.

30th August 1985.

La Trobe University
LECTURER IN SPANISH
(TENURABLE)
SCHOOL OF HUMANITIES

Applicants should have native or near native proficiency in Spanish as all teaching in the department is carried out through the medium of that language. A firm commitment to communicative rather than grammar/translation methods of teaching is required. Applicants should also have a good command of English, be in possession of a higher degree and have experience of teaching Siglo de Oro Literature.

The appointee will be expected to undertake practical language classes at all levels and to carry out and supervise research in the particular area of specialisation. Additional interests, e.g. Catalán, Portuguese, Medieval literature, would be welcome.

14 September, 1985.

University of Western Australia Perth
SENIOR LECTURER
(TENURABLE)
DEPARTMENT OF ENGLISH

In 1986, the Department of English will extend its range of courses to include a major sequence in Theatre and Drama studies and commence a collaborative programme in this area of study with the School of Human Communication and Comparative Literature at Murdoch University.

The Senior Lecturer will be expected to share the responsibility for the development of this collaborative venture as well as to pursue an active programme of teaching and research. Applications are invited from appropriately qualified women and men with a experience in both the scholarly and practical aspects of Theatre and Drama. Details of the existing theatre and drama courses and of this University's remarkable range of theatres is available from the Head of Department, Professor J.A. Hay.

LECTURER
(TENURABLE)
DEPARTMENT OF ENGLISH

At present the Department's programme includes courses in Medieval, Renaissance, Augustan, Romantic, Victorian, Early Modern and Contemporary English Literature, Nineteenth-century Australian Literature, Twentieth-century Australian Literature, American Literature, the Novel, Shakespeare, Drama and Theatre Studies, Contemporary Theatre, Literary Theory and Feminist Perspectives on Fiction. As well, the Department offers higher degree programmes at M A (by Coursework and by Thesis), M. Phil. (Coursework) and Ph.D. levels.

Applications are invited from appropriately qualified women and men with teaching and research experience in at least TWO of these fields. Other things being equal, preference will be given to applicants with primary interest in post-Medieval Literature.

Enquiries of an academic nature should be addressed to the Head of Department, Professor J.A. Hay.

For Both Posts

Benefits include superannuation, fares to Perth for appointee and dependents, removal allowances, study leave, long service leave and housing scheme. Conditions of appointment will be specified in any offer of appointment which may be made as a result of this advertisement.

Applications in duplicate stating full personal particulars, qualifications and experience and the names and addresses of three referees, should reach the Staffing Officer, University of Western Australia Nedlands, Western Australia 6009, by the 30th August, 1985.

The University of New South Wales, Sydney
LECTURER – SCHOOL OF POLITICAL SCIENCE
Fixed Term Appointment (Ref:1072)

Applicants should possess a higher degree or equivalent qualifications. The successful applicant will teach primarily in the area of Soviet/East European politics/government and willingness to teach in other areas as well is desirable.

The appointee will be expected to undertake practical language classes at all levels and to carry out and supervise research in the particular area of specialisation. Additional interests, e.g. Catalán, Portuguese, Medieval literature, would be welcome.

The appointment is available from February 1986 and appointment will be for a fixed period of three years.

Further information from Professor D.M. McCallum, Head of School (02) 697-2381. 26 August 1985

The University of Melbourne
LECTURER
(CONTINUING)
Department of French

Applicants should hold at least a Master's degree or preferably a doctorate in French, and should be native French speakers.

Teaching experience at an English-speaking university and research experience in applied linguistics and advanced language teaching methods are required.

The successful applicant will be expected to assist in organising, and contributing innovatively to, the department's language teaching programme in collaboration with colleagues in the department and in the Horwood Language Centre. The appointee will share in undergraduate teaching, primarily in the language area, and in the direction of undergraduate and postgraduate research, and will be expected to engage in research.

It is hoped that the appointee will take up duties on or about 1st February 1986.

13 September 1985.

LECTURER
(CONTINUING)–
DEPARTMENT OF ENGLISH

Applicants for this position should hold a higher degree in English. They should have taught and published primarily in the field of Australian Literature, although research and teaching in other areas of English studies would be welcome.

The successful applicant will be expected to take up duties as soon as possible after 1st January 1986, and will have opportunities to teach not only Pass and Honours students but also postgraduates.

An appointee who is not a naturalised or overseas will be eligible for assistance with travel and removal expenses.

30 September 1985.

LECTURER
(CONTINUING)–
DEPARTMENT OF ORGANIC CHEMISTRY

Applications are invited from appropriately qualified persons who should be able to commence duties early in 1986.

27th September 1985.

Massey University
Palmerston North
New Zealand
CHAIR IN SOCIAL WORK

Applications are invited for the Foundation Chair in Social Work, which will initially be located in the Social Work Unit, Department of Sociology. Suitable academic qualifications, professional qualifications and practice in the field are essential. A sound knowledge of social service and welfare provisions in New Zealand is also desirable.

The successful applicant will be expected to:

(i) promote the further development of the Social Work Unit's overall teaching programme, both internally and externally;

(ii) develop certain course developments which reflect both specific and general requirements in New Zealand; and

(iii) to encourage research in fields such as social work practice, social policy and welfare development.

Salary in the range $NZ35,319–$NZ39,602 according to qualifications and experience. (Salary scales are currently under review.)

Applications should include a complete curriculum vitae and the names of at least three referees.

Conditions of appointment are available from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London, WC1H 0PF. Completed forms should reach the General Secretary, City Polytechnic of Hong Kong, PO Box 98641, Tsim Sha Tsui Post Office, Kowloon, Hong Kong, by 6 September 1985; an additional copy should be lodged with the Association of Commonwealth Universities. (81862) H1

University of Kent at Canterbury
LECTURER IN ELECTRONIC ENGINEERING (Readvertisement)

Applications are invited for a Lectureship in Electronic Engineering. The University Council has agreed that while the post be established in the first instance for a period of three years the post will be reviewed on a rolling basis. The review will take account of the overall financial position of the University and, in particular, the funding from this area of work. It is hoped that it will be possible each year to extend the post for a further year but the University reserves the right not to do so. The closing date for receipt of applications is Friday, 20 August 1985. Please quote reference AS/ATTSES (81719) H1

UNIVERSITY OF ZIMBABWE
Applications are invited for the following posts:

The Professorship (Chair) in the Department of Chemistry
The Department of Chemistry invites applications for the Chair from analytical chemists with a good academic and solid sustained research record of recognised international excellence in the area of analytical spectroscopy and instrumentation preferably including application of computers in chemistry. The successful candidate will be expected to teach chemistry at undergraduate and postgraduate levels and conduct research in analytical chemistry.

Lecturerships/Senior Lecturerships/Associate Professorships in the following Departments

Department of Anatomy
Applicants should preferably be medically qualified and/or must have experience in Histology or Neuroanatomy. Overseas training scheme available for Zimbabwean citizens. Experience in teaching medical students desirable. Every facility for research is available.

Department of Medicine
Applicants should be general physicians with an interest in Gastroenterology, Respiratory Medicine or Neurology. They must have a MRPC (UK) or equivalent post graduate qualifications in medicine.

Department of Biochemistry
Applicants should have a PhD in either intermediary metabolism/enzymology or physical biochemistry from a recognised university. Teaching and postdoctoral research experience preferred. The successful candidate will be expected to undertake teaching and research in his/her area of specialisation, and to supervise postgraduate students.

Department of Rural and Urban Planning
This post requires an engineer/planner who can teach the various levels of infrastructure planning within the context of Urban and Rural Planning (e.g. transport, water supplies, etc.). Applicants must have a strong Engineering/Planning background and preferably some practical experience. They must have competence to teach undergraduate and graduate courses.

Salary Scales
(Non-Medical): Lecturer Z$11,680–Z$20,076, Senior Lecturer Z$20,580–Z$23,400, Associate Professor Z$21,084–Z$23,904, Professor Z$22,224–Z$25,100 (including allowance).
(Medical) (inclusive of the Professional Supplement): Lecturer Z$19,456–Z$20,004, Senior Lecturer Z$21,108–Z$24,156, Associate Professor Z$21,732–Z$24,672. N.B. In addition staff appointed to the above grades receive allowances as follows: Lecturer Z$2,250–Z$3,150, Senior Lecturer Z$3,150–Z$3,600, Associate Professor Z$3,300–Z$3,600 pa.

Appointment on the above scales according to qualifications and experience.

CONDITIONS OF SERVICE: Both permanent and short-term contracts are offered. Persons who are not Zimbabwean citizens may be appointed only on short-term contract basis with an initial period of two years. Short-term contracts are rarely, in exceptional cases, be extended.

To apply, send six copies of resume and curriculum vitae, which should include full name, place and date of birth, qualifications, employment and experience, present salary, date of availability, telephone number and names and addresses of three referees, to the Director, Appointments and Personnel, University of Zimbabwe, PO Box MP 167, Mount Pleasant, Harare, Zimbabwe (telex: 4-182 ZW). Applicants in the UK should also send an additional copy of their applications to the Secretary General, Association of Commonwealth Universities, (Appts), 36 Gordon Square, London, WC1H 0PF from whom further particulars are available.

Closing date for receipt of applications is 6th September 1985. (020892)

City Polytechnic of Hong Kong
Department of Business and Management
SENIOR LECTURER/ LECTURER IN LAW

Applications are invited for the above post which is tenable immediately.

General Requirements for Appointment.

Senior Lecturer: Candidates should have: a) a good honours degree and preferably wider qualifications, and b) at least 5 years' professional or commercial experience. Experience/interest in Commercial and Company Law is an advantage.

Lecturer: Candidates should have: a) a good honours degree or equivalent professional qualifications, and b) at least 3 years' professional or commercial experience. Experience/interest in Commercial and Company Law is an advantage.

Salary Scales
(1st HK$11,01 at 26; Senior Lecturer HK$208,920 p.a. HK$270,120 p.a. by 8 increments; Lecturer HK$118,740 p.a. to HK$199,680 p.a. by 12 increments.

Terms and Conditions of Appointment: Appointment will be made initially on two-year agreement terms subject terms. Apart from 25% terminal gratuity on basic salary received over the entire contract period, generous fringe benefits are offered including medical and dental benefits and, where appropriate, leave passages, housing accommodation or housing allowance and education allowance for dependent children.

Application forms and further information obtainable from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London, WC1H 0PF. Completed forms should reach the General Secretary, City Polytechnic of Hong Kong, PO Box 98641, Tsim Sha Tsui Post Office, Kowloon, Hong Kong, by 6 September 1985; an additional copy should be lodged with the Association of Commonwealth Universities. (81862) H1

UNIVERSITY OF DUBLIN
Trinity College
TEMPORARY LECTURESHIPS IN PURE MATHEMATICS

Applications are invited for two posts of Temporary Lecturer in the School of Mathematics at Trinity College, Dublin. The appointments will be tenable from 1st October, 1985, for a period which will not exceed one year.

An interest in Theoretical Computer Science or an area of mathematics related thereto would be an advantage in the case of one of these appointments.

Salary Scale:
IR£9,581–£16,962 p.a.

Appointments will be made within the salary range IR£9,581–£12,337 p.a. at a point commensurate with qualifications and experience to date.

Application forms and further particulars relating to these posts may be obtained from:
Establishment Officer,
Staff Office,
Trinity College,
Dublin 2.

The Closing date for receipt of completed applications will be Friday, 23rd August, 1985. (020842)

Appointments

Universities	Technical Colleges
Fellowships	Colleges of
Research and	Further Education
Studentships	Colleges and
Polytechnics	Departments of Art
Colleges of	Administration
Higher Education	Overseas
Colleges with	Adult Education
Teacher Education	Librarians
Colleges and	General Vacancies
Institutes of Technology	Industry and Commerce

Other classifications

Exhibitions	Personal
Awards	For Sale and Wanted
Conferences and Seminars	Holidays and
Courses	Accommodation

All box no. replies should be sent to THES at the above address

Personal

LOANS TO SALARIED WOMEN £250 WITHOUT SURETY. Salaried Women, Domestics and Pensioners. Ages 18-65. Apply by letter only quote age, full name and address. Richmond Investments Ltd., 8 Regent St., London SW1Y 4LR. Tel: 01-734 1784. (111057) H1

IMMEDIATE ADVANCES £100 to £50,000. Written terms on request. Regional Trust Ltd., 51 Dover Street, Piccadilly, London W1A 2PD. Phone 01-491 8934 or 499 5416 (Lond. Co.) (51877) H1

REMINDER

Copy for Classified Advertisements in The T.H.E.S. should arrive not later than 10am Monday preceeding publication.

(16033)

Universities continued

THE UNIVERSITY OF PAPUA NEW GUINEA

Port Moresby

Senior Lecturer/Associate Professor in Department of Fisheries

Applications are invited for the above position in the Department of Fisheries. The post falls vacant at the end of 1985. Applicants should have a Ph.D in Fisheries or a related discipline. Preference will be given to candidates with both teaching and research experience in the discipline. The appointee shall be responsible for academic leadership in the stream of aquatic resources management in the Department, and should have proven expertise in the following areas: Fisheries Management, Bioeconomics/Fisheries Economics, Aquatic Resources Management, Experience in Fish Population Dynamics and Quantitative Methods in Fisheries could be an advantage.

Lecturer/Senior Lecturer in Administrative Studies – P141002/85
(Political and Administrative Studies) (Re-advertisement)

The Department is inviting applications to teach in several of a range of public administration courses, including courses at the introductory level. The Department is particularly looking for candidates specialized in one or more of the following areas:

- Administration in advanced industrial
- Sociology
- Industrial Relations
- Personnel Administration
- Administrative Theory

However, candidates qualified in other specialities should not be deterred from applying. People who applied already for Position 141002 need not reapply. Their applications will be reconsidered. A PhD is the normal requirement for appointment at the Senior Lecturer level.

SALARIES – Associate Professor K33,265 per annum plus gratuity. Senior Lecturer K 21,255 per annum plus gratuity. Lecturer Grade 2 K 19,405 per annum plus gratuity. Lecturer Grade 1 K17,555 per annum plus gratuity.

CONDITIONS OF APPOINTMENT:

The successful applicant will be normally offered a contract for a three year appointment ending at the end of a semester. The gratuity entitlement is based on 24% of salary earned and is payable in instalments or lump sum and is taxed at a flat rate of 2%. In addition to the salaries quoted above, the main benefits include: support for approved research; rent-free accommodation; appointment and repatriation airfares for appointee and dependants; financial assistance towards the cost of transporting personal effects to and from PNG: 6 weeks annual recreation leave with home airfares available after each 18 months of continuous service; generous education subsidies for children attending schools in PNG or overseas; a salary continuation scheme to extended illness or disability. Applicants wish to arrange secondment from their home institutions will be welcomed. The terms and conditions are under review.

Applications which will be treated as strictly confidential and should include a full curriculum vitae, a recent small photograph and the names and addresses of three referees must be forwarded to the Deputy Registrar (Staffing), University of Papua New Guinea, P O Box 320, to reach him no later than *31 August 1985*. Candidates in the UK should also send a copy of their applications to the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF. (020697)

UNIVERSITY OF THE WEST INDIES

Professor of Spanish

Applicants should be well qualified in one or more of the following areas: Language, Latin American Literature, and Peninsular Literature. Duties to be assumed as soon as possible.

Lecturer/e/Assistant Lecturers

Department of Linguistics & Use of English (Two Posts)

Lecturer/Assistant Lecturer in Linguistics. Applicants should have postgraduate qualification in theoretical Linguistics and be familiar with current trends in the discipline. Successful applicant will be expected to develop and teach undergraduate and/or postgraduate courses in Linguistics, to supervise postgraduate students and/or to assist with existing courses in Linguistics and/or Use of English.

Lecturer/Assistant Lecturer in Use of English. Applicants should have a good first degree with English and/or Linguistics. Postgraduate qualification in the Teaching of English or in Linguistics would be an asset. Successful applicant will be expected to assist in teaching of Use of English course which includes the Nature and Functions of Language; Grammar and Usage; Techniques of Expository, Scientific and Technical Writing; Constructing and Analysing Arguments; Concepts of Style.

Assistant Public Relations Officer

Duties will include preparation of weekly 15-minute radio programme about what is happening at the University; assisting the University Public Relations Officer in preparing and distributing news bulletins, press releases, brochures, etc.; assisting with organisation of special events and ceremonies. Applicants should possess a university degree in a relevant field and should have basic competence in the field. Appointment in a relevant area and should have basic competence in the field. Appointment in a relevant area and should have basic competence in the field. experience. Duties to be assumed as soon as possible.

Medical Officer

University Health Centre

Applicants should be medical practitioners with at least two years' post registration practice. Duties to be assumed as soon a possible.

Salary Scales (under review): Professor in range J$36,340–47,184, Lecturer J$23,968 x 768–33,296 (9) x 928–35,248, Assistant Lecturer J$20,379 x 717–21,813, Medical Officer J$27,570 x 825–31,170 (8) x 828–32,826 x 924–35,562.

Up to five full economy class passages plus baggage allowance up to US$900 on appointment and normal termination. Special allowance up to US$300 for shipment of academic books and teaching/research equipment on appointment. Unfurnished accommodation at 10% of pensionable salary or housing allowance of 25% of pensionable salary. UWI contribution of equivalent of 10% of salary to Superannuation Scheme. Subsidized Health Services. Annual Book Allowance. Annual Study and Travel Grant for self, spouse and three children. Transportation allowance to persons who own and operate a motor vehicle.

Detailed applications (three copies) giving full particulars of qualifications and experience, date of birth, marital status, and the names and addresses of three referees should be sent as soon as possible to the Campus Registrar, UWI, Mona, Kingston 7, Jamaica. Applicants in the U.K. should also send one copy to the Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF. Further details obtainable from either source. (020665)

University of Reading

LECTURESHIP IN THE DEPARTMENT OF LINGUISTIC SCIENCE

Applications are invited from qualified speech therapists to contribute to the linguistics and Language Pathology courses in the Department. Candidates should have clinical and research interests in a relevant area though preference will be given to those who have specialised in child disorders. The appointment is from 1 October 1985 or as soon as possible thereafter.

Salary on the scale £7,520 to £14,925 (under review) plus USS/USDPS benefits.

Further particulars and application forms (3 copies) are available from the Personnel Officer, University of Reading, Whiteknights, P.O. Box 217, Reading RG6 2AH, tel: (0734) 875123, Ext. 7980. Please quote reference AC 5520. Closing date 5 September 1985. (51550) H1

Holidays and Accommodation

DRISCOLL HOUSE HOTEL
300 single rooms, £65 per week, marital board, apply 172 New Kent Road, London SE1 6TJ. Tel: (01) 703 4178.

University of Victoria of Wellington New Zealand

LECTURESHIP/ SENIOR LECTURESHIP IN ECONOMICS

Three posts

(Re-advertisement)

Applications are invited for the above posts from economists with any field of specialisation, although it is expected that at least one appointment will be made in the fields of monetary economics (with particular reference to empirical applications at micro level), the open economy and macroeconomics. Applicants to teach in large first-year or second-year undergraduate courses is essential, but there will also be opportunities to teach more advanced courses related to the appointee's interests.

Salary will be in the range NZ$33,522 - NZ$37,998 per annum, Senior Lecturers, and NZ$29,450 - NZ$33,652 per annum, Lecturers, and there is a bar between NZ$37,840 and NZ$34,600 per annum for Senior Lecturers.

Conditions of appointment and method of application are available from the Secretary General, Association of Universities of the Commonwealth, (Appts), 36 Gordon Square, London WC1H 0PF, or from the Administrative Assistant (Appointments), Victoria University of Wellington, Private Bag, Wellington, New Zealand, with whom applications close on 13 September 1985. (51561) H1

University of Bradford

LECTURESHIP IN PSYCHOLOGY.

Applications are invited for the above post in a small but active academic unit. The principal research interests are pharmacotheology, summary writing and technical communication, psychophysiological correlates of hypnosis, psychology applied to medicine, to oncology and education, and the classical conditioning of visual perception and cognition. Teaching duties will include research design and methodology, aspects of learning and memory, and some developmental psychology, all to at least Part I final degree level. Opportunities exist for the appointee to contribute to courses on computing with special reference to data acquisition and analysis. Salary on scale £7,520 - £14,725 p.a. Superannuable.

Further particulars and application form from the Deputy Secretary (Ref: Psy/L/8/TH), University of Bradford, West Yorkshire, BD7 1DP. Closing date 31 August, 1985. (020658)

Cranfield Institute of Technology

CENTRE FOR TRANSPORT STUDIES

RESEARCH OFFICER

Expert Systems in Freight Transport

Applications are invited for research post on a SERC funded project examining the relevance of expert systems to the freight transport industry. Applicants should have an understanding of computing and knowledge-based systems, and an interest in applying these systems to a service industry.

Salary within the range £7,520 – £12,150 per annum (under review).

This appointment is for 12 months only.

Further details and an application form available from the Personnel Department, Cranfield Institute of Technology, Cranfield, Bedford MK43 0AL, telephone Bedford (0234) 750111 extension 3343, quoting reference 5120C. (020650)

University of Dundee

CENTRE FOR MEDICAL EDUCATION

If you are medically qualified, or if you have worked in an educational establishment and have experience in producing learning resource material, there is a one year post in the Centre for Medical Education which may interest you.

It will involve you working on the development of a distance learning programme in psychiatry aimed at general practitioners. This is an interesting and challenging project, and one of several distance learning projects being carried out in this innovative department. Salary will be dependent on qualifications and experience and will be not less than £7,520 per annum and may be substantially higher for a candidate with clinical or psychiatric relevant educational experience.

Informal enquiries may be made to Adrian Lesbirel (0382 60111 ext 2566/2587).

Applications, including a curriculum vitae and the names of two referees, should be sent to the Personnel Office, The University, Dundee, DD1 4HN, by 31 August 1985, quoting reference number 5917 (M). (51563) H1

Colaiste na hOllscoile Gaillimh
UNIVERSITY COLLEGE GALWAY

IRELAND

Electronic Engineering

TEACHING APPOINTMENT

Applications are invited for a Temporary Teaching Appointment in Electronic Engineering for the 1985-6 Session, ending June 30, 1986. Salary IR£1,100 per month.

Closing date for receipt of applications: SEPTEMBER 24, 1985. Further information from the Registrar. (020647)

The University of Leeds

Department of Politics

LECTURER

(Politics and Parliamentary Studies)

Applications are invited for the above post available from 1/10/85 or as soon as possible thereafter. The successful candidate will help to run the Department's parliamentary studies programme, and teach and research in some related aspects of parliamentary process in one or more of the western democracies. Applicants should have a good honours degree, and appropriate research qualifications or experience. Applicants with alternative research interests will be seriously considered.

Salary on the scale for academic and academic related staff £7,520 - £14,925, (under review), according to age qualifications and experience.

Informal enquiries may be made to Dr. D. Coates (Tel. (0532) 431751, Ext. 6430).

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT quoting reference number 847/T. Closing date for applications 9 September 20th 1985. (51574) H1

University of Keele

Department of Adult and Continuing Education

TEMPORARY LECTURESHIP IN COMPUTER SCIENCE

Applications are invited for the three-year Temporary Lectureship in Computer Science tenable from 1st October 1985 or as soon as possible thereafter. Ideally the person appointed should have some experience in teaching adults, preferably in university work and will need imagination and initiative in the creation of opportunities for adult students. A good honours degree is expected and preferably a higher degree. The post is established as an Innovatory project by the University and the DES and carries special research responsibilities in one or more of a small number of indentified projects.

The initial salary will be at point 6 of the Lecturers' Scale, currently £8,860 (under review).

Application forms and further particulars from The Registrar, University of Keele, Keele, Staffs. ST5 5BG to whom completed forms should be returned by Monday 2nd September 1985. (51558) H1

Aberystwyth Coleg Prifysgol Cymru

TIWTOR MEWN GWLEIDYDDIAETH ADRAN GWYDDOR GWLÆDYDDIAETH

Gwahoddir caisiadau am swydd Tiwtor i ddysgu, am gyfnod o flwyddyn o 1 Hydref 1985, yng nghyswllt ag oddi wrth ymaelswyr sy'n astudio mewn unrhyw fas o Wyddor Gwleidyddiaeth a'r diseth Dyddiadau mewn Gwleidyddiaeth Gymru e'r cyswllt Cymreig, neu wleidyddiaeth Ilelsiriftiedd, diwylliant, a thirlogaethol, o fantais. Gwnaiff y penodai o ddysgu drwy'r Saesbeg yn gyntaf.

Cyflog ar raddfa 1B. Isafbwynt £6,600 y flwyddyn.

Manylion pellach a ffurflenni cais i'w cael oddi wrth y Swyddog Staffio, Coleg Prifysgol Cymru, Yr Amwythig, Sir y Fflint, Aberystwyth SY23 2AX. (Ffon 0970 617177, Est. 307). Dyddiad cau ar gyfer ceisiadau: Dydd Gwener, 23 Awst 1985. (51571) H1

University of Sheffield

Centre for Statistical Education

PROJECT OFFICER

Applications are invited for the post of Project Officer on a two year DES funded project, 'Profile of Statistics'. From 1 January 1986. The aim is to produce, evaluate and publish material for teaching A level statistics through practical and project work.

Initial salary up to £8,920 in the range 1A for graduates and Analogous staff under 25 years of age according to age, qualifications and experience.

Arrangements for secondment may be made, subject to agreement by existing employers.

Further details may be obtained from the Personnel Department, 1 Academic Staff, Sheffield S10 2TN to whom applications including a curriculum vitae and the names of three referees, should be sent by 23rd August 1985. Quote ref: RS19/DT. (51567) H1

University of Southampton

Department of Mathematics

PROGRAMMING ASSISTANTS

Applications are invited for two Temporary Computing Technical support posts within the Department of Mathematics. Applicants will be invited in the development and use of computing software to support the teaching and research of members of the Department. Applicants either mainframe or microcomputers is desirable.

The appointments will be in the range of £6,600 - £10,830 for 'Other Related Staff' point will be according to qualifications and experience.

Further particulars may be obtained from Mr. D.W. Powell, Staffing Department, University of Southampton, Southampton, SO9 5NH, whom applications (5 copies) giving date of birth, full curriculum vitae and the names and addresses of two referees, should be sent by 2 September, 1985. Please quote reference 1705/A/THES. (51565) H1

PLEASE MENTION THE T.H.E.S. WHEN REPLYING TO ADVERTISEMENTS

Aberystwyth The University College of Wales

Department of Applied Mathematics

Applications are invited from suitably qualified workers in the field of Continuum Mechanics for the position of

POST-DOCTORAL RESEARCH ASSISTANT

in the Department of Applied Mathematics. The project is concerned with modelling the processing of continuous fibres in the molten state. The project will be jointly supervised by Professor K. Walters and Dr R S Jones. The post is financed by SERC for a maximum period of 3 years and the starting salary will be up to (under review) of Grade 1A currently £8,485 per annum, under review. Application forms and further particulars may be obtained from the Staffing Officer, The University College of Wales, Old College, King Street, Aberystwyth, SY23 2AX. Tel (0970) 623111, Ext 2017. Closing date for applications: Friday, 30 August 1985. (51583) H1

Massey University Palmerston North New Zealand

LECTURER IN ORGANIC CHEMISTRY

Applications are invited for a position of Lecturer in Organic Chemistry in the Department of Chemistry and Biochemistry. Applicants should have a higher degree in Chemistry preferably with some industrial research or lecturing experience.

Salary: $NZ23,622–$NZ37,928 (currently under review).

Applications should include a curriculum vitae and the names and addresses of three referees.

Conditions of appointment are available from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF); or from the Registrar of the University with whom applications close on 30th September 1985. (51578) H1

The University of Leeds

School of History

LECTURER

Applications are invited for the above post available for a fixed term of up to three years from 1 October 1985 or as soon as possible thereafter.

Candidates will be expected to have a good honours degree and preferably will have completed or be about to complete a Ph.D. in an appropriate area.

The duties of the post will involve teaching early modern English history with particular reference to the sixteenth century as well as research.

Salary within the range £7,520 - £10,180 (under review) on the academic scale for Lecturers, according to age, qualifications and experience.

Informal enquiries may be made to Professor W.A. Speck (Tel. (0532) 431751, Ext. 6385).

Applications forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT quoting reference number 847/T. Closing date for applications 23rd August 1985. (51572) H1

University College London

Faculty of Laws

TEMPORARY JUNIOR LECTURESHIP IN COMMERCIAL LAW

Applications are invited for a temporary post, to run from 1 October 1985 with strong possibility of renewal for at least two more years. The lecturer will be required to provide some teaching in contract and tort as well as mainly to undertake research in Commercial law.

Salary range £7,330 - £8,920 (under review) plus £1,453 LA.

Applications to, and further information from, Personnel Secretary, Faculty of Laws, 4-8 Endsleigh Gardens, London WC1H 0EG. Closing date 23rd August 1985. (51585)

University of Keele

Department of Adult and Continuing Education

LECTURESHIP IN SOCIAL GERONTOLOGY

Applications are invited for a Lectureship in Social Gerontology tenable from 1st October 1986. The successful applicant will have a good honours degree in an appropriate discipline and should have a higher degree. The Department has established research programme in Gerontology and the successful applicant should have the research capacity to contribute to, and develop this programme. The post is for curriculum organisation and duties for a significant growing teaching programme.

Initial salary will be on the Lecturers' Scale (under review) £7,520 - £14,925 (under review) subject to qualifications, age and experience.

Application forms and further particulars from the Registrar, University of Keele, Keele, Staffs. ST5 5BG to whom completed forms should be returned by 20th September 1985. (51560) H1

Polytechnics

Sheffield City Polytechnic

Department of Electrical and Electronic Engineering

LECTURESHIPS IN INFORMATION TECHNOLOGY LECTURER II/ SENIOR LECTURER II

Salary scales: Lecturer II £7,648 - £12,099

Senior Lecturer £11,175 - £13,128 (bar) £14,061

Applications are invited from suitably qualified candidates for the above posts.

Candidates should have experience in one of the following areas: VLSI and associated electronic systems, optoelectronics/optical communications, CAE/ intelligent machine design/robotics or electronic circuit design/ electronic systems testing.

Application forms and further details are available from Personnel Officer, Personnel Department, Sheffield City Polytechnic, Pond Street House, Fitzalan Square, Sheffield S1 2BB. Tel: 83911, Ext 2387. Closing date 9 September.

Sheffield City Polytechnic is an Equal Opportunities Employer. Applicants interested in a Jobshare appointment should contact the Personnel Officer. (020643)

Polytechnics continued

RGIT

ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN
GRAY'S SCHOOL OF ART

Applications are invited for the following lecturing posts:

SENIOR LECTURER IN CHARGE OF FINE ART

The three disciplines dealt with under Fine Art are Drawing and Painting, Printmaking and Sculpture. Applicants should be Artists of distinction with experience in Art Education at Honours Degree level.

Senior Lecturer 'A' scale £12777 – £16104 (under review).

LECTURERS IN GRAPHIC DESIGN – TWO POSTS

One to act as Course Leader and one three-year contract post. Candidates should be practising Designers of distinction with relevant teaching experience and for the Course Leader post should have experience of teaching Graphic Design to Honours Degree level. Experience in other design disciplines an advantage.

Lecturer 'A' scale £8688 – £13716 (under review).

Assistance with removal expenses.

Further details from The Personnel Department, Robert Gordon's Institute of Technology, Schoolhill, ABERDEEN, AB9 1FR Tel (0224) 633811.

Closing date 30 September 1985. (020651)

Leicester Polytechnic

SCHOOL OF MATHEMATICS, COMPUTING AND STATISTICS

Temporary Lecturer in Mathematics (POST 341)

The School is seeking the above to teach at BSc and HND levels.

Applicants should have a broad based mathematical background as the work involves teaching mathematics degree and HND business students. The post will involve the monitoring of some final year degree projects which will utilise mathematics, computing and statistics.

Salary £7,648 — £12,099 per annum (pay award pending).

Application forms and further details for both posts available from the Personnel Office, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH.

EQUAL OPPORTUNITIES POLICY:
Applications are welcome from suitably qualified and/or experienced people regardless of race, ethnic origin, religion, sex, marital status or disability.

Bristol Polytechnic

Department of Construction & Environmental Health

RESEARCH A IN PERFORMANCE OF EXPANDED FOAM JOINT SEALANTS

A Research A is required to assist in a study of the properties, performance and applications of preformed expanded foam polyurethane joint sealants.

The post would be suitable for graduates in Civil Engineering, Building Technology, Mechanical Engineering or Applied Science or equivalent. Appointment is for one year initially, with the possibility of extension.

Salary Scale: £5,667 - £6,405 per annum.

For further details and an application form to be returned by 23rd August 1985 please contact the Personnel Office, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol BS16 1QY. Tel: 656261, Ext. 216 or 217.

Please quote Reference Number R83 in all communications.

Avon County Council is an Equal Opportunities Employer. (51557) H3

TEESSIDE POLYTECHNIC

Department of Humanities

LECTURER II/SENIOR LECTURER IN ENGLISH LITERATURE AND FRENCH

Applications are sought from suitably qualified persons for the above post. Applicants should have a combined honours degree in both subjects or be otherwise qualified and fluent in French and have a degree in English Literature.

The successful applicant will teach primarily on the BA (Hons) degree course in Humanities, and will be required to assist in the development of that course and in other areas of the Department's work. A further degree and evidence of recent research in modern French or English Literature would be an advantage.

Salary: £7,648 – £11,175 (efficiency bar) – £13,128 (work bar) – £14,061 per annum.

An appointment will be made at Lecturer II level and the maximum salary on appointment will be £12,099 per annum.

Closing date for applications: 25 August 1985.

Application forms and further particulars from the: Personnel Section, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA. Telephone: 0642 218121, Extension 4114.

An Equal Opportunity Employer. (020644)

HONG KONG POLYTECHNIC

The Polytechnic invites applications for the following posts tenable from September 1986:

Swire School of Design

Principal Lecturer in Product-Industrial Design

The appointee will be required to teach Product-Industrial Design up to CNAA degree level. He will also be responsible for the organisation and administration work associated with the course.

Candidates should have a good commercial knowledge and experience in the design of mass-produced products preferably for the consumer market, as well as design skill and experience in one or more of the following areas:- product engineering, plastics, electronics and ergonomics. Some teaching experience is preferred.

Department of Computing Studies

Senior Lecturer/Lecturer in Information Systems Analysis & Design/4th Generation Languages

Qualifications and Salaries (£1 = HK$10.93 at 23.7.85)

Principal Lecturer: HK$247,620–HK$307,260 p.a. Candidates should have (a) a good honours degree or professional qualification and an advanced specialist qualification or extensive experience in a specialist field; (b) substantial professional experience; and (c) proven administrative ability.

Senior Lecturer: HK$208,920–HK$270,720 p.a. Candidates should have (a) a good honours degree or professional qualification and preferably an advanced specialist qualification; and (b) substantial professional experience; and (c) proven administrative ability.

Lecturer: HK$112,740–HK$199,680 p.a. Candidates should have (a) a good honours degree or equivalent professional qualification but in certain disciplines, candidates with lower qualifications, such as at higher technician level, may be considered; and (b) at least three years' professional experience.

Appointment on 2-year contract initially with a 25% terminal gratuity on basic salary received over entire contract period. Benefits include long leave, subsidised accommodation for overseas appointees & local appointees on a salary of HK$13,165 p.m. or above; medical & dental benefits and children's education allowance.

Further information and application forms are obtainable from the Association of Commonwealth Universities (Appts), John Foster House, 36 Gordon Square, London WC1H 0PF. Completed application forms should be returned by 6th September 1985, with 1st copy direct to the General Secretary, Hong Kong Polytechnic, Hunghom, Kowloon, Hong Kong, and the 2nd copy to the Association of Commonwealth Universities. (020665)

North Staffordshire Polytechnic Staffordshire

Department of Humanities

FULL-TIME TEMPORARY LIU/SLa (TWO POSTS)

September, 1985 - August, 1986 with possible renewal for a further year.

Senior Lecturer £11,175 - £13,128 (Bar) - £14,061 Lecturer II £7,648 - £12,099 (pay award pending).

LECTURER II IN GERMAN

The successful candidate will be required to teach German Languages and Background Studies (post war history, politics and society) to degree and postgraduate level students on several degree courses. A relevant research interest, for example, in Linguistic or Literary and Political or the G.D.R., and high level of Linguistic ability will be expected.

LECTURER II IN LITERATURE

The successful candidate will be expected to offer specialism up to final-year Honours degree level within the following areas: 19th and 20th Century English Novel, Modernist Drama, 20th Century American Literature.

The ability to assist in other areas, for example, Interdisciplinary Studies and Modern Poetry, and experience of teaching at undergraduate level would be advantageous; relevant research interests will be expected.

Application form and further particulars for both the above posts may be obtained from the Personnel Section, North Staffordshire Polytechnic, College Road, Stoke-on-Trent ST4 2DE. Tel: (0782) 45331, ex Ext. 211.

Closing date - 16th August 1985. (51575) H3

Napier College

A Scottish Central Institution

LECTURER 'A' IN ACCOUNTING

Salary, on Scale: £8,688 - £13,77 (bar) - £13,716 (under review)

Required in the Department of Accounting to teach financial accounting, management accounting, taxation and auditing, as required, to final professional and/or degree level.

Applicants must hold a professional qualification or an appropriate degree and preferably have some teaching/professional/industrial experience.

Application forms and further particulars available from: Administrative Officer (Personnel), Napier College, 219 Colinton Road, EDINBURGH EH14 1DJ. Tel (0231 447-7070 x 274. (51580) H3

Robert Gordon's Institute of Technology

School of Nutritional Science

RESEARCH STUDENTSHIPS

Applications are invited from suitably qualified persons for Research Studentships in the above School.

Subject areas include -

(a) Studies on the metabolic activity of the human colon bacterial populations.

(b) Nutritional education.

(c) Trace element metabolism.

(d) Investigations into lipid metabolism.

Application forms from Personnel Department, Robert Gordon's Institute of Technology, Schoolhill, Aberdeen AB9 1FR. (51581) H3

Colleges and Institutes of Higher Education

DORSET INSTITUTE OF HIGHER EDUCATION

DEPARTMENT OF TOURISM, RECREATION AND FIELD SCIENCES

LECTURER II IN HUMAN GEOGRAPHY (TEMPORARY)

SALARY – LII £7,648 – £12,099
(Salary award pending)

This post is for one year only and arises from sabbatical leave of a member of staff and involves teaching on the following courses: BSc (Coll) Geography and Landscape Studies (Honours), BA (Hons) Combined Studies and BTEC Higher Diploma Business Studies (Tourism).

The person appointed will have the main responsibility for a final year option in the Geography of Recreation and Tourism and a second year course in Rural Problems and Policies. Contributions to courses in first and second year Human Geography and third year Philosophy of Geography may also be expected.

Applicants should have a good first degree in Geography and be able to demonstrate relevant research experience.

Closing date: 20 August 1985.

Further details and application form from: The Director, Dorset Institute of Higher Education, Wallsdown, Poole, Dorset BH12 6BB. Tel: (0202) 524111 ext 240.

(020648)

FOR DETAILS OF ADVERTISING IN THE T.H.E.S.
PLEASE RING SUE PEPLOW
01-253 3000 EXTN. 226

Research and Studentships

Research Assistant/ Demonstrators

(£5,910 – £6,153 – £6,405)
Pay Award Pending

Department of Computing:

POST A

Required to investigate systems software for fifth generation computing systems. The Research is concerned with special compilers and operating system kernels for the automatic segmentation, allocation and co-ordination of large algorithms (both numerically intensive and logically based) on large multiprocessor clusters. Extensive software development is involved, which would appeal to a person with the practical programming skills to turn theoretical concepts into working software packages.

Candidates will normally be required to have, or expect to obtain a first or good second class Honours degree in Computer Science, with knowledge and experience in the design and development of compilers and/or operating systems. Good graduates in allied disciplines such as mathematics, physics and engineering who can demonstrate a keen desire to absorb computer science concepts, coupled with experience in software development, are welcome to apply. The successful candidate will be expected to register for a higher degree.

POST B

This is a 3-year post to investigate inter-processor communication architecture for fifth generation computing system. The research involves the investigation of special bus techniques to speed-up inter-processor overheads for both numerically intensive and logically based algorithms. Extensive hardware development is also involved, which would appeal to a person with practical skills in turning theoretical concepts into a working system.

Candidates will normally be required to have, or expect to obtain, a first or good second class Honours degree in electronics, with knowledge and experience of microprocessor hardware design. The successful candidate will be expected to register for a higher degrees.

POST C

Required to assist in the field of hardware and/or software reliability modelling and analysis within the Reliability Group in the Department of Mathematics, Statistics and Operational Research.

The post is for a period of three years and the candidate is expected to register for a PhD or MPhil, as appropriate.

Further details and form of application available from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date for receipt of applications 22 August 1985. (020666)

TRENT POLYTECHNIC NOTTINGHAM

NORTH EAST BIOTECHNOLOGY CENTRE AT TEESIDE POLYTECHNIC LEA RESEARCH APPOINTMENTS

Teeside Polytechnic has received a Special research support as part of the NAB Biotechnology and Research Initiatives. It has made the following four research posts available to the North East Biotechnology Centre in the Chemical Engineering Department. The posts are tenable for 3 years only.

1. Post Doctoral Research Assistant in Cell Adhesion.
   To join a team investigating microbial cell fouling processes. Ideally, the successful candidate will have research experience in one or more of the following areas: biochemical engineering, fluid mechanics, rheology or colloid chemistry.
2. Post Doctoral Research Assistant in Immobilisation of Macromolecules.
   To join an interdisciplinary team investigating the stability and activity of immobilised antibody and receptor proteins attached to solid surfaces. Research experience in immunology or membrane systems or protein chemistry would be welcomed.
3. Post Doctoral Research Assistant in Mass Transfer in Biochemical Operations.
   To join a team investigating mass transfer aspects of fermenter design and solvent extraction. Research experience in mass transfer is essential.

Salary: Lecturer II Scale £7,648–£8,910

4. LEA Postgraduate Research Assistantship.
   To investigate factors controlling the particle size or protein and nucleic precipitates, as an aid to their subsequent separation from the liquid phase. Applicants should have a good honours degree in Biochemistry, Chemist Engineering or a related discipline.

Salary (which includes Payment for up to 6 hours per week teaching assignment) £5,910–£6,657 per annum.

Application forms and further particulars may be obtained from the Personnel Section, Teeside Polytechnic, Borough Road, Middlesbrough, Cleveland, TS1 3BA. Telephone: (0642) 218121, Ext. 4114

An Equal Opportunity Employer.

Closing date for applications: 26 August 1985. (020664)

University of Keele

TEACHING STUDENTSHIPS IN ECONOMICS/ POLITICS AT KEELE

Applications are invited from honours graduates with a degree classification of at least an upper second for a teaching studentship.

The studentship is available for up to three years. The successful applicant will be required to undertake a maximum of ten weeks teaching in each academic year on the Industrial Relations programme of the Department of Adult and Continuing Education. Registration for research may be either in the Department of Economics and Management Science or the Department of Politics.

For further details write to The Registrar, University of Keele, Staffordshire ST5 5BG. (51559) H12

University of Nottingham

Department of Social Administration and Social Work

Applications are invited from graduates with a minimum of two passes in the social sciences for

TWO RESEARCH ASSISTANTSHIPS REQUIRED FOR D.H.S.S.

supported research into collaboration between Family Practitioner Committees and District Health Authorities. One post will be for three years and the second for two years, starting as soon after September as possible.

Salary: £7,980 - £8,990 p.a. (under review)

The great holder, Professor A.J. Willcocks, will be available for informal discussions if required.

Further particulars and application forms, returnable not later than 16th August, 1985, may be obtained from the Staff Appointments Officer, University of Nottingham, University Park, Nottingham NG7 2RD. Ref No. 1606. (51554) H12

Research and Studentships continued

TEESSIDE POLYTECHNIC
Department of Chemistry

LEA RESEARCH ASSISTANTSHIP ON THE STRUCTURE AND REACTIVITY OF INDUSTRIAL CARBONS

Applications are invited for the above post tenable for a maximum period of three years. Applicants should have a first or second class honours degree (or equivalent qualification) in a relevant subject, and will be required to register for a higher degree.

The research involves the use of thermal analysis, microscopy, gas sorption analysis and other techniques.

Salary (which includes payment for up to 6 hours per week teaching assignment) £5,910–£6,657 per annum.

Application forms and further particulars may be obtained from the: Personnel Office, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA, Telephone: 0642 218121, Extension 4114.

An Equal Opportunity Employer.

Closing date for applications: 6th September 1985.

(020840)

UNIVERSITY OF EDINBURGH

RESEARCH AT EDINBURGH

A major five year Alvey-funded research and development project in automatic speech recognition started at Edinburgh in October 1984. The project, which is being carried out by the Departments of Artificial Intelligence, Biocreening Engineering and Linguistics, is applying Artificial Intelligence techniques to the design and implementation of a machine-assisted speech recognition system. Computing resources include a Vax 11/750 running Unix (TM Bell Laboratories) a Nascomp 600 and a network of Xerox 1108/1109 running Interlisp-D. The eventual target system is a parallel reduction machine now under development in a related Alvey project.

We now invite applications for the following new research posts:

Morphologist (Computational Linguistics) Ref: CSTR/1

Lexicon Builder (Computational Linguistics) Ref: CSTR/2

Programmer/Corpus Linguist (Syntax Semantics) Ref: CSTR/3

Knowledge Engineer (Expert Systems) CSTR/4

Electronics Engineer (Signal Processing) Ref: CSTR/5

Applied Mathematician (Systems Integration) Ref: CSTR/6

Parallel Architecture Strategist (Systems Integration) Ref: CSTR/7

Starting salaries from £8,920 to £14,925 per annum. Candidates should normally be postdoctoral.

To apply, or to request further information, write to Dr John Lever, Director, Centre for Speech Technology Research, Department of Linguistics, Adam Ferguson Building, 40 George Square, Edinburgh EH8 9LL or call 031 667 1011, Ext. 6580.

Applications, together with the names of two referees and three copies of your curriculum vitae should be received before 31st August 1985.

Please quote Reference No. 3278.

(020866)

OXFORD POLYTECHNIC
Faculty of Technology
Department of Catering Management

Research Studentship-Physicist/Physical Chemist/Food Scientist

Applications are invited for a studentship to work on pulsed nuclear magnetic resonance studying the dynamics of water in food systems. The award is funded by MAFF and is tenable for three years and the student will be expected to register for a Ph.D (CNAA).

Candidates should hold a first or upper second class honours degree in a relevant physical or chemical science and show a willingness to work in a multidisciplinary environment.

Applications with curriculum vitae and the names of two referees to:

Mr G A Le Grys,
Department of Catering Management,
Oxford Polytechnic,
Headington,
Oxford, OX3 OBP.

An equal opportunities employer

(020854)

OXFORD POLYTECHNIC
Department of Catering Management

RESEARCH ASSISTANT GRADE A

Applications are invited for a Research Assistantship Grade A for an industrially-funded project concerned with cooking processes. The project will involve the study of changes in foodstuffs during cooking and relationships between these changes and modes of heat transfer.

The post is available for 12 months from 1 September 1985 or as soon as possible thereafter. Applicants should possess a minimum of an upper second class honours degree in food science or a relevant discipline.

Applications, which should include a C.V. and the names and addresses of two referees, should be forwarded to:

Mr John O'Connor,
Department of Catering Management,
Oxford Polytechnic,
Headington,
Oxford, OX3 OBP.

Telephone: Oxford (0865) 64777 ext: 468 for further details.

(020853)

The University of Sheffield
Department of Ceramics, Glasses and Polymers

RESEARCH ASSISTANT POST ADVANCED CARBON AND GRAPHITE MATERIALS

Applications are invited for this post, tenable for three years from 1 October 1985, at a starting salary of £8,920. The aim of the work is to explore new methods of producing carbon and graphite materials of novel structure suitable for high technology applications including aerospace. The materials will be derived ultimately from liquid crystalline hydrocarbon precursors by a variety of high temperature processing techniques. The work may include studies of carbon fibre reinforced carbon composites as well as particulate composites. In addition to processing studies some mechanical property investigations will also be undertaken. Suitably qualified persons with a degree or equivalent experience may apply. Expertise with composite materials, liquid crystals, polymer or ceramic processing or high temperature studies would be an advantage but is not essential.

Applications (3 copies) including the names and addresses of two academic referees should be sent by 5 September 1985 to the Personnel Department (Academic Staff), University of Sheffield, Shrivfield 2TN from whom further particulars are available. (51573) H13

The Polytechnic Wolverhampton

RESEARCHER VACANCIES 1985

Applications are invited for work on the following projects from 1 October 1985. Interviews will be held in September.

1. Investigate the diffusion of new technology in West Midlands industrial sectors, with emphasis on possible policy initiatives in training and investment by local industrial support agencies; background in science, engineering or economics.
2. Study of Automated Solid Cell Peptide Synthesis with emphasis on Intelligent Computer Control.
3. Facial Morphometry Across the Teacher Education and Employment Interface.
4. Design and introduction of the Tertiary Education System of Australia.

Salary: £5,910 to £6,657 (subject to review)

Application forms and details from Staffing Office, The Polytechnic, Wolverhampton WV1 1SB. Telephone (0902) 710654 (24 hour answering) (51584) H12

The University of Manchester
Department of Social Administration

RESEARCH ASSOCIATE AND RESEARCH ASSISTANT

Applications are invited for three two posts tenable from October 1st, 1985 or as soon as possible thereafter, to work with Dr. R.C. King on a DHSS funded research programme on Life Expectancy and Social Class. The research will be based on the Longitudinal Study and will involve the analysis of data on mortality and morbidity.

Applicants should have a first or upper second class honours degree in a relevant discipline and preferably some experience of quantitative analysis. The Research Assistant will be responsible for collation and analysis using qualitative and quantitative methods. The Research Assistant will be registered for a higher degree.

Salary scale: Research Associate £7,330 – £8,920 p.a. (Research Associate) and £6,000 – £7,330 p.a. (Research Assistant). Superannuation.

Further details are available from the Director of the project, Dr Michael Chatterton, Department of Social Administration, The University, Manchester M13 9PL, to whom written applications should be sent, together with the names and addresses of three referees. (Closing date: August 31st, 1985). (51564) H14

The University of Liverpool
Department of Economic and Business Studies

Applications are invited for two posts; of

RESEARCH ASSOCIATE OR RESEARCH FELLOW AND OF RESEARCH ASSISTANT

(two-year appointments from 1 October 1985) to work with Professor Patrick Hutchinson in developing applications of the Liverpool Model of the UK and World Economies. Some areas of specification would be partial information, testing against alternative models, assessment of policy coordination, modelling credibility and economic policy.

One post is a senior one. The successful applicant will be familiar with the relevant expenditure literature and techniques and will be expected to take active research initiatives.

The other post would suit someone with a postgraduate qualification wishing to obtain research experience.

The posts are financed under a grant from the ESRC Consortium for Modelling and Forecasting the UK Economy which runs until the end of September 1987.

The initial salaries will be as follows (according to qualifications): Research Fellow on scale £14,135 – £17,705 per annum; research associate on the scale £9,580 – £14,180 per annum.

Research assistant on the scale £6,600 – £8,920 per annum.

Applications, stating clearly which post is being applied for, together with the names of three referees, should be received not later than August 16th by the Registrar, The University, P.O. Box 147, Liverpool L69 3BX from whom further particulars may be obtained. Quote ref: RA/ECONOMICS/85. (51568) H12

The University of Sheffield
Department of Sociological Studies

Joint Unit for Social Services Research

RESEARCH OFFICER

Applications are invited for the above post funded by the Joseph Rowntree Memorial Trust to carry out a study of the effects of deinstitutionalisation on mentally handicapped people and their families.

The project will be based in the Joint Unit for Social Services Research under the direction of Mr Tim Booth in collaboration with Sheffield Social Services Department.

Candidates must hold an honours degree or postgraduate qualification in the social sciences and have a record of proven competence in empirical research. Preference will be given to those who can demonstrate a capacity for successfully completing written research. Relevant experience in the field of mental handicap, client studies, outcome measurement or service evaluation is desirable but not essential.

The appointment will be for a fixed term of three years commencing from or about 1 October 1985 at a starting salary of £10,350 (under review) on the IA scale for Research and Analogous Staff.

Applications (three copies) including a curriculum vitae, a list of publications if any, and the names and addresses of three referees should be sent to the Personnel Department (Academic Staff) (Ref), The University, Sheffield S10 2TN from whom further particulars may be obtained. The closing date for applications is 23 August 1985. Quote ref: 3560. (51568) H12

University of Bradford
Management Centre.

RESEARCH ASSISTANT IN TECHNOLOGICAL MANAGEMENT –

(Fixed-Term appointment).
MANAGERIAL TASKS OF ARCHITECTS AND BUILDERS.

The Research Assistant will carry out a survey of the managerial tasks and training needs of Architects and Chartered Builders. Applicants should have a good honours degree and other training in social sciences/technologies or three or more years experience of the construction industry. The post is funded for 18 months under the ESRC's specially promoted programme for research in construction management. The commencing salary will be in the range £6,600 – £7,520 p.a. (under review).

Further particulars and application forms from the Deputy Secretary, (Ref: RA/TM/ATB), University of Bradford, West Yorkshire, BD7 1DP. Informal enquiries to Professor Wearne Tel: 0274 733466, Ext. 8560. Closing date 31 August 1985.

(020869)

University of Bradford

MSc COURSE STUDENTSHIPS

in Electrical & Electronic Engineering

Applications are invited from holders of Honours Degrees in Physics, Mathematics or Electronics Engineering for admission to MSc Courses in Radio Frequency Engineering; Microprocessor Engineering; Power Electronics (joint course with Loughborough University); Communication Engineering, Power Systems Technology (joint courses with UMIST). SERC Studentships are available to suitably qualified applicants.

Closing date for applications 16th August 1985.

Further details from Dr J. G. Gardiner, University of Bradford, West Yorkshire BD7 1DP. Tel: 0274 733466, Ext. 8560. (020849)

University of Bradford

RESEARCH ASSISTANT

Applications are invited for an S.E.R.C. Research Assistantship. The appointee will work with Dr R.C. King on representations of Lie superalgebras. Candidates should have some familiarity with representations of Lie algebras and should possess qualifications in Pure Mathematics or Applied Mathematics or Theoretical Physics. Computer skills will be an advantage.

The appointment will commence as soon as possible and will be available for a period of 3 years.

Salary on scale: £7,330 – £8,450 per annum (under review).

Further particulars may be obtained from Dr R.C. King, The University, Southampton SO9 5NH to whom applications (3 copies of CV and 2 copies) giving date of birth and brief curriculum vitae should be sent by 5th September 1985. Candidates should arrange for two references to be sent direct to Dr King at the above address. (51566) H12

REMINDER

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University of Southampton
Department of Mathematics

POSTDOCTORAL RESEARCH ASSISTANTSHIP

Applications are invited for an S.E.R.C. Research Assistantship. The appointee will work with Dr R.C. King on representations of Lie superalgebras. Candidates should have some familiarity with representations of Lie algebras and should possess qualifications in Pure Mathematics or Applied Mathematics or Theoretical Physics. Computer skills will be an advantage.

The appointment will commence as soon as possible and will be available for a period of 3 years.

Salary on scale: £7,330 – £8,450 per annum (under review).

Further particulars may be obtained from Dr R.C. King, The University, Southampton SO9 5NH to whom applications (3 copies) giving date of birth and brief curriculum vitae should be sent by 5th September 1985. Candidates should arrange for two references to be sent direct to Dr King at the above address. (51566) H12

North Staffordshire Polytechnic
Department of History of Art & Design

RESEARCH ASSISTANT

£5,161 – £5,910 (pay award pending)

Required to work on a project related to the role of Gallery Gazette 1877 – 1914. The post is available for a two year period with the possibility of an extension for a further year.

The successful candidate will be required to register with CNAA for M.Phil and/or Ph.D.

Application forms and further particulars are obtainable from the Personnel Section, North Staffordshire Polytechnic, College Road, Stoke-on-Trent ST4 2DE. Tel: (0782) 45631, Ext. 311.

Closing date: Friday, 6th September, 1985. (51570) H14

Colleges and Institutes of Higher Education continued

The Suffolk College of Higher and Further Education

Required for 1 September or as soon as possible thereafter

LECTURER GRADE 1 SENIOR LECTURER IN INSURANCE

to offer a number of hours subject to CII and IC courses.

FCII qualification, industrial/commercial experience essential. A degree in business studies and some teaching experience desirable.

The appointment will be at lecturer grade 2 or senior lecturer level according to qualifications and experience.

Salary Scale: Lecturer Grade 2 £7,548 – £10,746 Senior Lecturer £10,137 – £13,136 (both under review).

Further details and application form can be obtained from the Principal, Suffolk College, Rope Walk, Ipswich IP4 1LT, to whom completed forms should be returned within fourteen days of this advertisement. Please enclose a large sae and quote post number 3.4.91.

Suffolk County Council

(51548)

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Overseas

WAIT Western Australian Institute of Technology

Tenured Senior Lecturer PHYSIOTHERAPY

Teach undergraduate and postgraduate physiotherapy students in one or more of ergonomics and biomechanics, orthopaedics, gerontology and cardiopulmonary physiotherapy in the School of Physiotherapy. Also supervise relevant clinical practice and postgraduate student programmes and projects, assist with School management and course development/certification design.

Applicants should be registered physiotherapists with teaching and demonstrated leadership and curriculum design experience. Extensive experience in the theory and practice of the appropriate area/s is required; a higher degree preferred (Ref. 808)

Tenured Senior Lecturer INFORMATION SYSTEMS

The School of Computing and Quantitative Studies is one of five Schools within the Division of Business and Administration. The Division uses a wide range of computing equipment including an Amdahl 470, a VAX 8600, PDP11 mini-computers and microcomputers. An extensive range of software packages is available and the Division is continually enhancing its software facilities.

The School provides an applied computing orientation to students pursuing or wishing to pursue a career in the DP industry. The programmes offered are: Bachelor of Business (Information Processing); Bachelor of Business (Information Systems); Graduate Diploma in Business Computing; Postgraduate Diploma/Master of Business (Business Systems); Postgraduate Diploma/Master of Information Systems.

The Tenured Senior Lecturer will be involved in the co-ordination of the School's Information Systems programmes which include the impact of information technology on organisations, information analysis, systems analysis and design, decision support systems, DP management including systems evaluation, and the use of packaged software including fourth generation languages.

The appointee will also be responsible for the co-ordination of certain Information Systems courses for students in other Schools within the Division, expected to develop and teach course units and play an active role in planning the on-going development of the School's programmes. An active interest in applied research would be advantageous.

Relevant teaching, administration, industrial/business experience and appropriate postgraduate qualifications are required. (Ref. 809)

Salary ranges (SAust): Senior Lecturer $35,203–$41,029. Lecturer $30,205–$34,487.

Qualifications: Candidates with lesser qualifications than stated above will be considered at other than the advertised level of appointment.

Conditions: Include fares for appointee and family plus assistance with removal expenses, superannuation.

Applications: Details including names and addresses of three referees should be submitted not later than 23 August 1985 to the Appointments Officer, Western Australian Institute of Technology, Kent Street, Bentley, Western Australia 6102 or Cable (WAINTECH) citing "Appointments", position, reference number and your return airmail address.

When applying please quote Ref. No. and Code HE5

The University of Brunei Darussalam

SENIOR LECTURESHIPS/ LECTURESHIPS

The University of Brunei Darussalam, which is to come into being in October 1985, invites applications for Senior Lectureships/Lectureships also Business Studies/Public Administration.

Starting salary and grade within a range from B$3,000–B$6,200 monthly (£1 sterling equals $3.28 approximately), depending on qualifications and experience. Other benefits include subsidised accommodation, family passages, education allowances for children, generous paid leave, annual bonus of 1 month's salary and 25% of salary as end of contract tax free gratuity. Advantageous car loans can also be provided. (There is no income tax in Brunei and no currency export restrictions).

Further particulars from the Registrar, University of Leeds, LS2 7JT, telephone 0532 431751 (ext 2180). Applications with full c.v. and details of two referees should arrive by 19th August 1985, although applications arriving within a reasonable time after the date will be given consideration. Interviews will be held at the University of Leeds in the period 26th – 30th August 1985.

(020868)

The University of Aberdeen
Department of Environmental and Occupational Medicine and Department of Psychology

RESEARCH ASSISTANT

Applications are invited for the post of Research Assistant (full-time or part-time) to work on an investigation of attitudes to vaccine and health. The project is carried on a larger study funded by the Health Promotion Research Trust to examine the impact of vaccine on health and illness. The position is available for a 2½-year period to start immediately.

A good honours degree in Psychology or a related discipline is required. Familiarity with survey methods and computer-based data analysis would be an advantage, but is not essential. The successful candidate will be encouraged to register for a higher degree.

Salary will be on the Range 1b Scale for Research and Analogous Staff, £6,660 – £8,030 per annum, with appropriate placing (scale under review).

Further particulars and application forms from the Secretary, The University, Aberdeen, with whom applications (2 copies) should be lodged not later than 23 August 1985. (Ref No W1/015). (51572) H10

Miscellaneous

NORFOLK COUNTY COUNCIL
PLANNING AND PROPERTY DEPARTMENT
PLANNING DIVISION

HISTORIC BUILDING INSPECTORS

Salary £9477 per annum (pay award pending)

Two inspectors are required to assist with the resurvey of Norfolk and the preparation of new lists of buildings of special architectural or historic interest. The appointments are being made in conjunction with the Department of the Environment and will be for a temporary period of one year. A good working knowledge of English architectural styles from mediaeval times is essential. Specialist knowledge of the lesser domestic buildings of Norfolk would be an advantage.

Applicants must have a car for which an allowance is payable.

Further details and applications forms available from the Director of Planning and Property Norfolk County Council County Hall Martineau Lane Norwich NR1 2DH to be returned by Monday 19th August 1985.

(020839)

PLEASE MENTION THE T.H.E.S. when replying to advertisements

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COPY FOR CLASSIFIED ADVERTISEMENTS IN THE **T.H.E.S** SHOULD ARRIVE NOT LATER THAN 10.00 A.M. MONDAY PRECEDING THE PUBLICATION

Overseas continued

LECTURERS

Malawi College of Accountancy

Applications are invited from suitably qualified Lecturers to lecture in accountancy courses leading to Technician and ACCA (UK)/CPA (MALAWI) qualifications at the Malawi College of Accountancy. Appointments will be at Principal, Senior Lecturer or Lecturer level depending on qualifications and experience.

POST (1)
Accountancy, Taxation or related subjects. REF SB36/1.

POST (2)
Quantitive subjects, Data Processing and Systems Design. Ref SB36/2.

Principal and Senior Lecturers should normally have both a professional accounting qualification and a Masters or PhD, with at least 5 years' experience in tertiary education. Lecturers should possess a recognised accounting qualification and have at least 5 years' practical post-qualification experience. Some experience of living and working in a developing country, preferably Africa would be an advantage.

Whitest preference will be given to persons with qualifications and experience as detailed above, applicants who can teach in at least two other courses within the accounting subject areas of Financial Accounting, Cost and Management Accounting, Accounting Theory, Auditing and Taxation, will also be considered.

Malawi has much to commend it in terms of climate, living and working conditions and social/leisure amenities. These are 2 year contracts and salaries (which will be discussed at interview) include a special supplement paid to expatriates, plus a tax free gratuity of 25% of salary on completion of the tour. Other benefits include free passages, settlement allowances, subsidised accommodation, generous home leave and medical care.

Please write with details of qualifications and experience, quoting appropriate reference, to: Recruitment Section, Malawi High Commission, 33 Grosvenor Street, London, W1.

Closing date for applications: 23rd August 1985.

(020858)

Malawi... the warm heart of Africa

CRIMINAL JUSTICE

University of Illinois at Chicago. Subject to the availability of funds, the Department of Criminal Justice is extending its search for two tenure track positions. 1) Research and statistical methods. Responsible for teaching undergraduate and graduate classes in research methods and statistics, including introduction to computer utilization. 2) Law and Society. Responsible for teaching undergraduate and graduate classes dealing with rules, regulations, and laws as an aspect of social organizations.

Qualifications: Ph.D. in relevant subject matter fields. For the law and society position possession also of a J.D. will be viewed preferentially. A.B.D.s nearing completion of degree requirements will be considered for a junior appointment. Appointments will be either the assistant or associate professor levels.

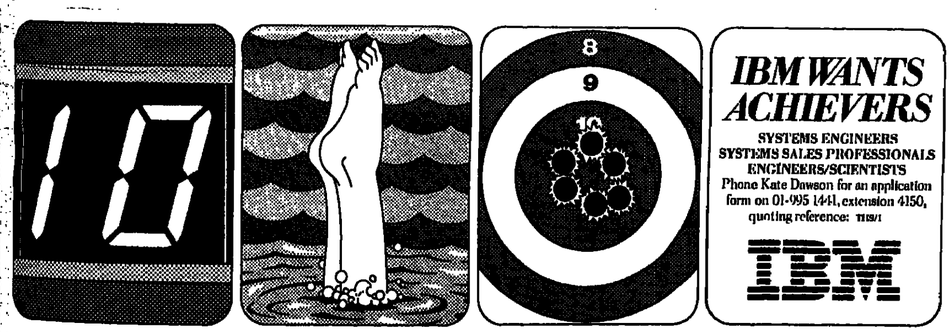
Send letter, current c.v. and names of at least three references to Dr. Joseph L. Peterson, Chair of Search Committee, Department of Criminal Justice, University of Illinois at Chicago, Box 4348 (m/c 141), Chicago, IL 60680. Closing date September 15, 1985.

The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.

(020845)

UNITED STATES. Academic post at universities, colleges and other institutions of higher and further education are regularly available in most subject areas in all parts of the United States. For information on subscriptions to a monthly bulletin providing details on positions, write to Overseas Academic Opportunities, 949 East 36th Street, Brooklyn, New York 11210, U.S.A. (51556) H14

Industry and Commerce



IBM WANTS ACHIEVERS

SYSTEMS ENGINEERS
SYSTEMS SALES PROFESSIONALS
ENGINEERS/SCIENTISTS

Phone Kate Dawson for an application form on 01-995 1441, extension 4150, quoting reference: TES/1

IBM

Independent Colleges

London International College

is seeking lecturers (full or part-time) in the following subjects to be taught at a variety of levels:–

1) Economics
2) Management
3) Marketing
4) Corporate Strategy
5) Business Computing

Please write to Dr. J. P. Harris, London International College, 67-83 Seven Sisters Road, London N7 6BU or telephone on 01-263 6464.

(020843)

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The Times Higher Education Supplement

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